BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

```
FILE 'HOME' ENTERED AT 15:22:40 ON 21 JUL 2003

=> file reg
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21

FILE 'REGISTRY' ENTERED AT 15:22:44 ON 21 JUL 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2003 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   20 JUL 2003  HIGHEST RN 551897-78-0
DICTIONARY FILE UPDATES:  20 JUL 2003  HIGHEST RN 551897-78-0

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> s 1/Ti and 2/Si
        220201 1/TI
        137764 2/SI
L1        1528 1/TI AND 2/SI

=> s 5/Ti and 3/Si
           740 5/TI
         43331 3/SI
L2          67 5/TI AND 3/SI

=> s 1/Ta and 2/Si
         46448 1/TA
        137764 2/SI
L3          340 1/TA AND 2/SI

=> s 5/Ta and 3/Si
           279 5/TA
         43331 3/SI
L4             5 5/TA AND 3/SI

=> s 1/Nb and 2/Si
        112877 1/NB
        137764 2/SI
L5          944 1/NB AND 2/SI

=> s 5/Nb and 3/Si
           596 5/NB
         43331 3/SI
L6           21 5/NB AND 3/SI

=> file reg
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                        51.84      52.05
```

```
FILE 'REGISTRY' ENTERED AT 15:24:25 ON 21 JUL 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2003 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   20 JUL 2003  HIGHEST RN 551897-78-0
DICTIONARY FILE UPDATES:  20 JUL 2003  HIGHEST RN 551897-78-0

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> file caplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.40      52.45

FILE 'CAPLUS' ENTERED AT 15:24:28 ON 21 JUL 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)
```



```
FILE COVERS 1907 - 21 Jul 2003  VOL 139 ISS 4
FILE LAST UPDATED: 20 Jul 2003  (20030720/ED)

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.


=> s l1-l6
          4605 L1
           971 L2
          1011 L3
           139 L4
           843 L5
           319 L6
L7        6562 (L1 OR L2 OR L3 OR L4 OR L5 OR L6)

=> 7 and battery
7 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
```

```
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s 7 and battery
       2360375 7
        100340 BATTERY
L8        6650 7 AND BATTERY

=> s 7 and collector
       2360375 7
         38483 COLLECTOR
L9        3343 7 AND COLLECTOR

=> s l7 and battery
        100340 BATTERY
L10          35 L7 AND BATTERY

=> s l7 and collector
         38483 COLLECTOR
L11          23 L7 AND COLLECTOR

=> s l10 or l11
L12          56 L10 OR L11

=> s l10 and l11
L13           2 L10 AND L11

=> d l13 1-2 ibib kwic

L13  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:         2000:824573  CAPLUS
DOCUMENT NUMBER:          133:364471
TITLE:                    Secondary battery electrode collectors, the
                          batteries, and manufacture of the batteries
INVENTOR(S):              Kurisawa, Isamu
PATENT ASSIGNEE(S):       Japan Storage Battery Co., Ltd., Japan
SOURCE:                   PCT Int. Appl., 32 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.          KIND  DATE           APPLICATION NO.  DATE
     ----------------    ----  --------       ---------------  --------
     WO 2000070696       A1    20001123       WO 2000-JP3145   20000517
         W:  DE, JP, US
     DE 10081688         T     20011004       DE 2000-10081688 20000517
PRIORITY APPLN. INFO.:                    JP 1999-137876   A  19990518
                                          WO 2000-JP3145   W  20000517
REFERENCE COUNT:          17     THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS
                                 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI   Secondary battery electrode collectors, the batteries, and
     manufacture of the batteries
ST   lead battery electrode collector conductive ceramic
     coating; plasma CVD lead battery electrode collector
     coating; sputtering lead battery electrode collector
     coating
IT   Battery electrodes
        (manuf. of conductive ceramic coated metal electrode substrates for
        lead acid batteries)
IT   12034-80-9, Niobium silicide (NbSi2) 12039-79-1,
     Tantalum silicide (TaSi2) 12039-83-7, Titanium silicide (TiSi2)
     12060-34-3, Niobium silicide (Nb5Si3) 12067-56-0,
```

Tantalum silicide (Ta5Si3) **12067-57-1**, Titanium silicide (Ti5Si3) 18282-10-5, Tin dioxide
RL: MOA (Modifier or additive use); USES (Uses)
(manuf. of conductive ceramic coated metal electrode substrates for lead acid batteries)

L13 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1989:577946 CAPLUS
DOCUMENT NUMBER: 111:177946
TITLE: Electrode material for use in suspension-containing secondary-**battery** half cell, the half cell, and secondary **battery** comprising the half cell
INVENTOR(S): Sonneveld, Pieter Jan
PATENT ASSIGNEE(S): Stork Screens B. V., Neth.
SOURCE: Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 330290	A1	19890830	EP 1989-200462	19890223
EP 330290	B1	19960515		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
NL 8800500	A	19890918	NL 1988-500	19880226
AT 138226	E	19960615	AT 1989-200462	19890223
US 4948682	A	19900814	US 1989-314989	19890224
CA 1324409	A1	19931116	CA 1989-591960	19890224
JP 01265457	A2	19891023	JP 1989-46350	19890227

PRIORITY APPLN. INFO.: NL 1988-500 19880226

TI Electrode material for use in suspension-containing secondary-**battery** half cell, the half cell, and secondary **battery** comprising the half cell

AB The electrode material for use in a secondary-**battery** half-cell, in which a suspension of active-mass (Zn in alk. electrolyte) particles is circulated, is a porous elec. conducting material which is coated with a layer of an elec. conducting ceramic material such as VN, NbC, NbN, TiB2, TiN, TiC, Ti5Si3, TiSi2, MgN, MgC, and Mg2Si. The porous elec. conducting material is porous glassy C or expanded metal through which the active-mass suspension can flow. The half cell comprises a casing, an electrolyte circulation means, and the invention electrode material.

ST **battery** electrode suspension electrolyte; nitride **collector** suspension electrode **battery**; carbide **collector** suspension electrode **battery**; boride **collector** suspension electrode **battery**; silicide **collector** suspension electrode **battery**; ceramic **collector** suspension electrode **battery**; current **collector** suspension electrode **battery**

IT Electrodes
(**battery**, active mass suspension in electrolyte and conducting ceramic-coated current collectors for)

IT Anodes
(**battery**, zinc, with active mass suspended in electrolyte and conducting ceramic-coated current collectors)

IT **12039-83-7**, Titanium disilicide 12045-63-5, Titanium diboride **12067-57-1**, Titanium silicide (Ti5Si3) 12069-94-2, Niobium carbide (NbC) 12070-08-5, Titanium carbide (TiC) 12167-05-4, Magnesium carbide (MgC) 22831-39-6, Magnesium silicide (Mg2Si) 24621-21-4, Niobium nitride (NbN) 24646-85-3, Vanadium nitride (VN) 25583-20-4, Titanium nitride (TiN) 60195-15-5, Magnesium nitride (MgN)
RL: USES (Uses)

(electrode current collectors coated with, for batteries with suspended active mass)

=> d l10 1-35 ibib kwic

L10 ANSWER 1 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2003:334475 CAPLUS
DOCUMENT NUMBER: 138:306870
TITLE: Secondary **battery** cathode which can insert and extract lithium ions
INVENTOR(S): Numata, Tatsuji; Noguchi, Takehiro
PATENT ASSIGNEE(S): Japan
SOURCE: U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003082453	A1	20030501	US 2002-283830	20021030
JP 2003142101	A2	20030516	JP 2001-335652	20011031

PRIORITY APPLN. INFO.: JP 2001-335652 A 20011031
TI Secondary **battery** cathode which can insert and extract lithium ions
AB In a secondary **battery** using a Li-contg. oxide for a pos. electrode, a nitride such as TiN or ZrN or an oxide such as MoO3, TiO, Ti2O3, NbO, or RuO2 is employed as an electrocond. giving agent. Thereby a secondary **battery** that is excellent in **battery** performance, esp. excellent in capacity retaining performance and charge and discharge cycle performance at a high temp., and more specifically, a high-voltage secondary **battery** the energy d. of which is high can be obtained.
ST **battery** cathode lithium intercalation deintercalation
IT Intercalation
(electrochem.; secondary **battery** cathode which can insert and ext. lithium ions)
IT Secondary batteries
(lithium; secondary **battery** cathode which can insert and ext. lithium ions)
IT Intercalation
(retro, electrochem.; secondary **battery** cathode which can insert and ext. lithium ions)
IT **Battery** cathodes
(secondary **battery** cathode which can insert and ext. lithium ions)
IT Fluoropolymers, uses
Nitrides
Oxides (inorganic), uses
RL: MOA (Modifier or additive use); USES (Uses)
(secondary **battery** cathode which can insert and ext. lithium ions)
IT 17341-24-1, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(secondary **battery** cathode which can insert and ext. lithium ions)
IT 12016-89-6, Cobalt lithium manganese oxide colimno4 12031-75-3, Lithium manganese nickel oxide LiMn1.5Ni0.5O4 21324-40-3, Lithium hexafluorophosphate 508200-30-4, Lithium manganese nickel titanium oxide LiMn1.3Ni0.5Ti0.2O4 511270-39-6, Lithium manganese nickel oxide silicate (LiMn1.45Ni0.5O3.8(SiO4)0.05)

RL: DEV (Device component use); USES (Uses)
(secondary **battery** cathode which can insert and ext. lithium ions)

IT 1313-27-5, Molybdenum trioxide, uses 1344-54-3, Titanium oxide ti2o3 7439-98-7, Molybdenum, uses 7440-03-1, Niobium, uses 7440-32-6, Titanium, uses 7440-67-7, Zirconium, uses 7782-42-5, Graphite, uses 12034-57-0, Niobium oxide nbo 12036-10-1, Ruthenium oxide (RuO2) **12039-83-7**, Titanium disilicide 12070-08-5, Titanium carbide tic 12137-20-1, Titanium oxide tio 18868-43-4, Molybdenum dioxide 24937-79-9, Pvdf 25583-20-4, Titanium nitride tin 25658-42-8, Zirconium nitride zrn
RL: MOA (Modifier or additive use); USES (Uses)
(secondary **battery** cathode which can insert and ext. lithium ions)

L10 ANSWER 2 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:962339 CAPLUS
DOCUMENT NUMBER: 138:58874
TITLE: Nonaqueous electrolyte secondary **battery** with porous negative electrode
INVENTOR(S): Bito, Yasuhiko; Kasamatsu, Shinji; Nitta, Yoshiaki
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002367602	A2	20021220	JP 2001-170588	20010606

PRIORITY APPLN. INFO.: JP 2001-170588 20010606

TI Nonaqueous electrolyte secondary **battery** with porous negative electrode

AB A neg. electrode in a nonaq. electrolyte secondary **battery** comprises a metal or alloy capable of absorbing and desorbing Li, the porosity of the neg. electrode being 50-90 vol.%. The metal is preferably Al, Si, or Sn, and the alloy is LixTi.alpha.Sn.beta.Si.gamma. (x .ltoreq.10, .alpha. = 0.1-10, .beta. = 0.1-10, and .gamma. = 0.1-30) and preferably contains CoSn or Cu5Sn. The neg. electrode active mass may be in the form of a porous layer plated on a substrate. The neg. electrode has a long cycle life which results in a longer cycle life and higher reliability of the **battery**.

ST nonaq electrolyte secondary **battery** porous neg electrode; aluminum silicon tin porous neg electrode lithium **battery**

IT Secondary batteries
(lithium; nonaq. electrolyte secondary **battery** with porous neg. electrode)

IT **Battery** cathodes
Porosity
Porous materials
(nonaq. electrolyte secondary **battery** with porous neg. electrode)

IT 7429-90-5, Aluminum, uses 7440-21-3, Silicon, uses 7440-31-5, Tin, uses 12039-70-2, Titanium silicide tisi **12039-83-7**, Titanium disilicide 12166-63-1 12510-35-9, Snti2
RL: DEV (Device component use); USES (Uses)
(cathode contg.; nonaq. electrolyte secondary **battery** with porous neg. electrode)

IT 12019-69-1 12297-65-3 77137-25-8, Titanium silicide ti2si 479065-20-8
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte secondary **battery** with porous neg.

electrode)

L10 ANSWER 3 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:313448 CAPLUS
DOCUMENT NUMBER: 136:328185
TITLE: Conductive resin sheet for **battery** electrode and its manufacture
INVENTOR(S): Sakamoto, Jun; Tsunashima, Kenji; Machida, Tetsuya
PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002124265	A2	20020426	JP 2000-317606	20001018

PRIORITY APPLN. INFO.: JP 2000-317606 20001018
TI Conductive resin sheet for **battery** electrode and its manufacture
ST **battery** electrode conductor particle thermoplastic resin sheet manuf
IT **Battery** electrodes
(properties and manuf. of conductor particle contg. thermoplastic electrode sheets for lead acid batteries)
IT 9002-88-4, Polyethylene **12039-83-7**, Titanium disilicide 13463-67-7, Titania, uses 18282-10-5, Tin dioxide
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(properties and manuf. of conductor particle contg. thermoplastic electrode sheets for batteries)

L10 ANSWER 4 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:238073 CAPLUS
DOCUMENT NUMBER: 136:265793
TITLE: Manufacture of anode active mass for secondary nonaqueous electrolyte **battery**
INVENTOR(S): Nakamoto, Takayuki; Sato, Toshitada; Shimamura, Harushige; Okamura, Kazuhiro
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002093412	A2	20020329	JP 2000-276915	20000912

PRIORITY APPLN. INFO.: JP 2000-276915 20000912
TI Manufacture of anode active mass for secondary nonaqueous electrolyte **battery**
ST secondary **battery** anode active mass manuf shearing force
IT **Battery** anodes
(manuf. of anode active mass by applying shearing force on raw material for secondary lithium batteries)
IT 12003-96-2P, AlTi 12032-53-0P **12039-83-7P**, Titanium silicide (TiSi2) 12054-11-4P, CuSn 12201-89-7P, Nickel silicide (NiSi2) 12509-20-5P 12510-35-9P, SnTi2 12763-92-7P 55071-50-6P 210885-32-8P 264124-74-5P 405234-66-4P
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(manuf. of anode active mass by applying shearing force on raw material for secondary lithium batteries)

L10 ANSWER 5 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:72468 CAPLUS
DOCUMENT NUMBER: 136:121128
TITLE: Secondary nonaqueous electrolyte **battery**
INVENTOR(S): Sato, Toshitada; Bito, Yasuhiko; Okamura, Kazuhiro; Nitta, Yoshiaki
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002007239	A1	20020124	WO 2001-JP6189	20010717
W: CN, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
JP 2002042805	A2	20020208	JP 2000-218528	20000719
EP 1302994	A1	20030416	EP 2001-948051	20010717
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
US 2003068558	A1	20030410	US 2002-88398	20020318

PRIORITY APPLN. INFO.: JP 2000-218528 A 20000719
WO 2001-JP6189 W 20010717
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Secondary nonaqueous electrolyte **battery**
AB The **battery** has a Li intercalating cathode, a Li salt nonaq. electrolyte soln., and a Li intercalating anode, composed of a powd. alloy contg. .gtoreq.2 metal and metalloid elements and .gtoreq.1 of N and O; where the alloy has a Li intercalating phase contg. .ltoreq.0.5% O and N and a Li non-intercalating phase contg. .gtoreq.1.0% O and N.
ST secondary lithium **battery** anode alloy compn; multiphase alloy nitrogen oxygen **battery** anode
IT **Battery** anodes
(compns. and structure of powd. multiphase oxygen and nitrogen contg. lithium intercalating alloys for secondary lithium **battery** anodes)
IT 7704-34-9, Sulfur, uses 7723-14-0, Phosphorus, uses 7789-24-4, Lithium fluoride, uses
RL: MOA (Modifier or additive use); USES (Uses)
(additives in powd. multiphase oxygen and nitrogen contg. lithium intercalating alloys for secondary lithium **battery** anodes)
IT 7439-92-1, Lead, uses 7440-21-3, Silicon, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-55-3, Gallium, uses 7440-69-9, Bismuth, uses 7440-74-6, Indium, uses 12014-73-2, CeNi 12039-41-7 12039-70-2, Titanium silicide (TiSi) **12039-83-7**, Titanium silicide (TiSi2) 12052-50-5 12142-63-1, LaNi 12158-68-8 12166-63-1 12440-44-7, PbTi4 12510-35-9 70495-28-2 390417-59-1 390417-60-4 390417-61-5 390417-62-6 390417-63-7
RL: DEV (Device component use); USES (Uses)
(compns. and structure of powd. multiphase oxygen and nitrogen contg. lithium intercalating alloys for secondary lithium **battery** anodes)
IT 7727-37-9, Nitrogen, uses 7782-44-7, Oxygen, uses
RL: MOA (Modifier or additive use); USES (Uses)
(compns. and structure of powd. multiphase oxygen and nitrogen contg. lithium intercalating alloys for secondary lithium **battery**

anodes)

L10 ANSWER 6 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:45320 CAPLUS
DOCUMENT NUMBER: 136:328023
TITLE: Investigations of a number of alternative negative electrode materials for use in lithium cells
AUTHOR(S): Netz, A.; Huggins, R. A.; Weppner, W.
CORPORATE SOURCE: Faculty of Engineering, Christian-Albrechts University, Kiel, D-24143, Germany
SOURCE: Ionics (2001), 7(4, 5 & 6), 433-439
CODEN: IONIFA; ISSN: 0947-7047
PUBLISHER: Institute for Ionics
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ST **battery** anode borides silicides

IT **Battery** anodes
(alternative neg. electrode materials for use in lithium cells)

IT 7440-21-3, Silicon, processes 7440-42-8, Boron, processes 12007-50-0, Boron silicide (B3Si) 12007-99-7, Calcium boride CaB6 12008-21-8, Lanthanum boride LaB6 12017-12-8, Cobalt silicide CoSi2 12022-99-0, Iron silicide FeSi2 **12039-83-7**, Titanium silicide TiSi2 12039-87-1, Vanadium silicide VSi2 12041-50-8, Aluminum boride AlB2 12069-32-8, Boron carbide 12201-89-7, Nickel silicide NiSi2 22831-39-6, Magnesium silicide Mg2Si 113443-18-8, Silicon monoxide
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(alternative neg. electrode materials for use in lithium cells)

L10 ANSWER 7 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:796591 CAPLUS
DOCUMENT NUMBER: 135:346872
TITLE: Anode active mass for secondary nonaqueous electrolyte batteries and its manufacture
INVENTOR(S): Takeshita, Yukiteru; Kamishiro, Koichi; Negi, Noriyuki; Uenaka, Hideya; Kohiyori, Motoji; Nitta, Yoshiaki; Shimamura, Harushige; Okamura, Kazuhiro
PATENT ASSIGNEE(S): Sumitomo Metal Industries Ltd., Japan; Matsushita Electric Industrial Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001307723	A2	20011102	JP 2000-118648	20000419

PRIORITY APPLN. INFO.: JP 2000-118648 20000419

ST **battery** lithium alloy anode compn manuf

IT **Battery** anodes
(structure and manuf. of multiphase lithium alloying anode active mass for secondary lithium batteries)

IT 7440-21-3, Silicon, miscellaneous 11099-22-2 11148-21-3 12017-12-8, Cobalt silicide (CoSi2) 12022-99-0, Iron silicide (FeSi2) 12035-57-3, NiSi **12039-83-7**, Titanium silicide (TiSi2) 12039-87-1, Vanadium silicide (VSi2) 12039-88-2, Tungsten silicide (WSi2) 12137-04-1, Neodymium silicide (NdSi2) 12201-89-7, Nickel silicide (NiSi2) 12394-61-5 53095-77-5, Magnesium silicide (MgSi2) 71818-44-5 125694-24-8
RL: MSC (Miscellaneous)

(structure and manuf. of multiphase lithium alloying anode active mass for secondary lithium batteries)

L10 ANSWER 8 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:796403 CAPLUS
DOCUMENT NUMBER: 135:346864
TITLE: Cathode for nonaqueous electrolyte lithium ion **battery**
INVENTOR(S): Yamada, Atsuo; Yamahira, Takayuki
PATENT ASSIGNEE(S): Sony Corporation, Japan
SOURCE: Eur. Pat. Appl., 26 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1150368	A2	20011031	EP 2001-109919	20010424
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001307730	A2	20011102	JP 2000-128998	20000425
CA 2344981	AA	20011025	CA 2001-2344981	20010425
CN 1320976	A	20011107	CN 2001-117211	20010425
US 2002004169	A1	20020110	US 2001-842485	20010425

PRIORITY APPLN. INFO.: JP 2000-128998 A 20000425
TI Cathode for nonaqueous electrolyte lithium ion **battery**
IT Charcoal
RL: DEV (Device component use); USES (Uses)
(activated; cathode for nonaq. electrolyte lithium ion **battery**)
IT **Battery** cathodes
(cathode for nonaq. electrolyte lithium ion **battery**)
IT Carbon fibers, uses
Carbonaceous materials (technological products)
Coke
Petroleum coke
RL: DEV (Device component use); USES (Uses)
(cathode for nonaq. electrolyte lithium ion **battery**)
IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(cathode for nonaq. electrolyte lithium ion **battery**)
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(cathode for nonaq. electrolyte lithium ion **battery**)
IT Organic compounds, uses
RL: DEV (Device component use); USES (Uses)
(high mol., sintered; cathode for nonaq. electrolyte lithium ion **battery**)
IT Secondary batteries
(lithium; cathode for nonaq. electrolyte lithium ion **battery**)
IT Coke
RL: DEV (Device component use); USES (Uses)
(needle; cathode for nonaq. electrolyte lithium ion **battery**)
IT Coke
RL: DEV (Device component use); USES (Uses)
(pitch; cathode for nonaq. electrolyte lithium ion **battery**)
IT Furan resins
Phenolic resins, uses
RL: DEV (Device component use); USES (Uses)
(sintered and carbonized; cathode for nonaq. electrolyte lithium ion **battery**)
IT 50-21-5D, Lactic acid, ester 60-29-7, Diethyl ether, uses 64-19-7D,

Acetic acid, ester, uses 75-05-8, Acetonitrile, uses 79-09-4D, Propionic acid, ester 96-47-9, 2-Methyltetrahydrofuran 96-48-0 96-49-1, Ethylene carbonate 100-66-3, Anisole, uses 105-58-8, Diethyl carbonate 107-12-0, Propionitrile 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 126-33-0, Sulfolane 409-21-2, Silicon carbide sic, uses 554-12-1, Methyl propionate 616-38-6, Dimethyl carbonate 623-42-7, Methyl butyrate 623-96-1, Dipropyl carbonate 629-14-1, 1,2-Diethoxyethane 646-06-0, 1,3-Dioxolane 872-36-6, Vinylene carbonate 1072-47-5, 4-Methyl-1,3-dioxolane 1313-08-2 2550-62-1, Lithium methanesulfonate 4437-85-8, Butylene carbonate 7439-93-2, Lithium, uses 7440-50-8, Copper, uses 7447-41-8, Lithium chloride, uses 7550-35-8, Lithium bromide 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 9003-07-0, Polypropylene 12007-81-7, Silicon tetraboride 12008-29-6, Silicon hexaboride 12013-56-8, Calcium disilicide 12017-12-8, Cobalt disilicide 12018-09-6, Chromium disilicide 12022-99-0, Iron disilicide 12032-86-9, Manganese disilicide 12033-76-0, Silicon nitride oxide Si2N2O 12033-89-5, Silicon nitride, uses **12034-80-9**, Niobium disilicide **12039-79-1**, Tantalum disilicide **12039-83-7**, Titanium silicide TiSi2 12039-87-1, Vanadium disilicide 12039-88-2, Tungsten disilicide 12059-14-2, Nickel silicide (Ni2Si) 12136-78-6, Molybdenum disilicide 12159-07-8, Copper silicide cu5si 12190-79-3, Cobalt lithium oxide colio2 12201-89-7, Nickel disilicide 14283-07-9, Lithium tetrafluoroborate 14485-20-2, Lithium tetraphenylborate 15365-14-7, Iron lithium phosphate FeLiPO4 19414-36-9, Iron lithium manganese phosphate ((Fe,Mn)Li(PO4)) 21324-40-3, Lithium hexafluorophosphate 22831-39-6, Magnesium silicide (Mg2Si) 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium trifluoromethanesulfonate 35678-71-8, Methylsulfolane 90076-65-6 113066-89-0, Cobalt lithium nickel oxide Co0.2LiNi0.8O2 113671-38-8, Silicon oxide SiO0-2 160479-36-7, Lithium tin oxide 178958-56-0, Lithium silicon oxide 300858-61-1 339333-78-7, Zinc silicide ZnSi2 371148-86-6, Tin oxide (SnO0-2) 371148-87-7, Lithium magnesium manganese oxide (LiMg0.2Mn0.8O2)
RL: DEV (Device component use); USES (Uses)
(cathode for nonaq. electrolyte lithium ion **battery**)

IT 24937-79-9, Pvdf
RL: TEM (Technical or engineered material use); USES (Uses)
(cathode for nonaq. electrolyte lithium ion **battery**)

IT 7440-44-0, Carbon, uses
RL: DEV (Device component use); USES (Uses)
(pyrocarbon; cathode for nonaq. electrolyte lithium ion **battery**)

L10 ANSWER 9 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:780558 CAPLUS
DOCUMENT NUMBER: 135:346844
TITLE: Anode active mass for secondary nonaqueous batteries and its manufacture
INVENTOR(S): Takeshita, Yukiteru; Negi, Noriyuki; Yamamoto, Hiroyoshi; Kohiyori, Motoji; Yonemura, Koji; Nitta, Yoshiaki; Shimamura, Harushige
PATENT ASSIGNEE(S): Sumitomo Metal Industries Ltd., Japan; Matsushita Electric Industrial Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001297757	A2	20011026	JP 2000-113912	20000414

PRIORITY APPLN. INFO.: JP 2000-113912 20000414

ST secondary **battery** anode active mass multiphase structure manuf; lithium **battery** anode active mass multiphase structure

IT **Battery** anodes
(compns. and structure and manuf. of multiphase anode active mass for secondary lithium batteries)

IT 7440-21-3P, Silicon, uses 12017-12-8P, Cobalt silicide (CoSi2) 12018-09-6P, Chromium silicide (CrSi2) 12022-99-0P, Iron silicide (FeSi2) 12032-85-8DP, Manganese silicide (MnSi), silicon deficient 12035-57-3P, NiSi **12039-83-7P**, Titanium silicide (TiSi2) 12039-87-1P, Vanadium silicide (VSi2) 12039-88-2P, Tungsten silicide (WSi2) 12201-89-7P, Nickel silicide (NiSi2) 12371-64-1P, Iron silicide (Fe2Si3) 12535-46-5P, Vanadium silicide (V2Si3) 12643-20-8P, Copper silicide 22831-39-6P, Magnesium silicide (Mg2Si) 370598-28-0P, Cobalt silicide (Co0.42Si0.58) 370598-29-1P, Cobalt silicide (Co0.38Si0.62) 370598-30-4P, Titanium silicide (Ti0.39Si0.61) 370598-31-5P, Manganese silicide (Mn0.48Si0.52) 370598-33-7P, Chromium silicide (Cr0.48Si0.6) 370598-34-8P, Tungsten silicide (W0.7Si0.3) 370598-38-2P, Magnesium silicide (Mg0.48Si0.52) 370598-39-3P, Neodymium silicide (Nd0.64Si0.35) 370598-40-6P, Cobalt tin silicide (Co0.43Sn0.01Si0.56) 370598-41-7P, Aluminum titanium silicide (Al0.01Ti0.41Si0.58) 370598-42-8P, Vanadium phosphide silicide (V0.42P0.01Si0.57) 370598-43-9P, Cobalt germanium silicide (Co0.42Ge0.03Si0.55) 370598-44-0P, Germanium titanium zinc silicide (Ge0.15Ti0.39Zn0.01Si0.45)
RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)
(compns. and structure and manuf. of silicon based multiphase anode active mass for secondary lithium batteries)

L10 ANSWER 10 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:763375 CAPLUS
DOCUMENT NUMBER: 135:320488
TITLE: Secondary nonaqueous electrolyte batteries
INVENTOR(S): Nitta, Yoshiaki; Bito, Yasuhiko; Sato, Toshitada; Okamura, Kazuhiro; Shimamura, Harunari
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001078167	A1	20011018	WO 2001-JP2842	20010330
W: CN, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
JP 2001291512	A2	20011019	JP 2000-103039	20000405
EP 1274140	A1	20030108	EP 2001-917771	20010330
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
US 2003039891	A1	20030227	US 2002-129240	20020501

PRIORITY APPLN. INFO.: JP 2000-103039 A 20000405
WO 2001-JP2842 W 20010330
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ST secondary lithium **battery** anode structure compn; core shell structure lithium **battery** anode mass; silicon anode active mass structure lithium **battery**; tin anode active mass structure lithium **battery**; zinc anode active mass structure lithium **battery**

IT **Battery** anodes
(anode active mass particles with intermetallic compd. or solid soln.

shells for secondary lithium batteries)
IT 1313-08-2 11099-22-2 11109-57-2 11110-87-5 11124-13-3 11125-88-5
11143-56-9 11149-84-1 12017-12-8, Cobalt silicide (CoSi2) 12019-69-1
12023-01-7 **12039-83-7**, Titanium silicide (TiSi2) 12057-70-4
12166-63-1 12201-89-7, Nickel silicide (NiSi2) 12211-23-3
22831-39-6, Magnesium silicide (Mg2Si) 37230-21-0 71818-44-5
74946-92-2 141850-96-6 144692-49-9
RL: DEV (Device component use); USES (Uses)
(anode active mass particles with intermetallic compd. or solid soln. shells for secondary lithium batteries)
IT 7440-21-3, Silicon, uses
RL: DEV (Device component use); USES (Uses)
(silicon particles with intermetallic compd. or solid soln. shells for secondary lithium **battery** anodes)
IT 7440-31-5, Tin, uses
RL: DEV (Device component use); USES (Uses)
(tin particles with intermetallic compd. or solid soln. shells for secondary lithium **battery** anodes)
IT 7440-66-6, Zinc, uses
RL: DEV (Device component use); USES (Uses)
(zinc particles with intermetallic compd. or solid soln. shells for secondary lithium **battery** anodes)

L10 ANSWER 11 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:760452 CAPLUS
DOCUMENT NUMBER: 135:320485
TITLE: Manufacture of alloy powder by gas atomization for anode of secondary nonaqueous-electrolyte lithium **battery**
INVENTOR(S): Kohiyori, Motoji; Asabe, Kazutaka; Takeshita, Yukiteru; Negi, Noriyuki; Yamamoto, Hiroyoshi; Nitta, Yoshiaki; Shimamura, Harushige; Okamura, Kazuhiro
PATENT ASSIGNEE(S): Sumitomo Metal Industries Ltd., Japan; Matsushita Electric Industrial Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001291513	A2	20011019	JP 2000-104832	20000406

PRIORITY APPLN. INFO.: JP 2000-104832 20000406
TI Manufacture of alloy powder by gas atomization for anode of secondary nonaqueous-electrolyte lithium **battery**
ST gas atomization anode alloy powder nonaq electrolyte lithium **battery**; intermetallic compd phase anode alloy powder gas atomization **battery**; discharge capacity gas atomization anode alloy powder lithium **battery**
IT **Battery** anodes
Powders
(manuf. of anode alloy powder contg. intermetallic compd. phase by gas atomization for nonaq.-electrolyte Li **battery** with high discharge capacity)
IT Atomizing (spraying)
(pneumatic; manuf. of anode alloy powder contg. intermetallic compd. phase by gas atomization for nonaq.-electrolyte Li **battery** with high discharge capacity)
IT 12017-12-8P, Cobalt silicide (CoSi2) 12035-57-3P, NiSi
12039-83-7P, Titanium silicide (TiSi2) 12201-89-7P, Nickel silicide (NiSi2)
RL: PNU (Preparation, unclassified); PREP (Preparation)

(intermetallic compd. phase; manuf. of anode alloy powder contg. intermetallic compd. phase by gas atomization for nonaq.-electrolyte Li **battery** with high discharge capacity)

IT 169217-08-7P 212574-89-5P 217196-37-7P 367266-45-3P
RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)
(manuf. of anode alloy powder contg. intermetallic compd. phase by gas atomization for nonaq.-electrolyte Li **battery** with high discharge capacity)

IT 7440-37-1, Argon, uses 7440-59-7, Helium, uses 7727-37-9, Nitrogen, uses
RL: NUU (Other use, unclassified); USES (Uses)
(spraying gas; manuf. of anode alloy powder contg. intermetallic compd. phase by gas atomization for nonaq.-electrolyte Li **battery** with high discharge capacity)

L10 ANSWER 12 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:692228 CAPLUS
DOCUMENT NUMBER: 135:259779
TITLE: Silicon-tin-based alloy for **battery** anode, its manufacture by rapid cooling, and nonaqueous electrolyte secondary **battery** using it
INVENTOR(S): Shimamura, Harushige; Nitta, Yoshiaki; Negi, Noriyuki; Uenaka, Hideya
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan; Sumitomo Metal Industries Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001256974	A2	20010921	JP 2000-65572	20000309

PRIORITY APPLN. INFO.: JP 2000-65572 20000309

TI Silicon-tin-based alloy for **battery** anode, its manufacture by rapid cooling, and nonaqueous electrolyte secondary **battery** using it

AB The alloy, whose surface oxide film is removed, comprises (1) an A phase contg. Si and/or Si surrounded with a B phase contg. intermetallic compds. or solid solns. of Si or Sn with .gtoreq.1 other element selected from Group 2A, 3B-2B transition metal, 3A, 4A except C, and 5A elements on the long-form periodic table or (2) a Si phase surrounded with a Sn phase. The alloy is manufd. by (1) cooling a Si-Sn molten alloy at .gtoreq.100 degree/s, followed by immersing in an aq. acidic soln. The **battery** uses the above alloy as an anode. The **battery** shows high discharge capacity, energy-conversion efficiency, and long cycle life.

ST silicon tin alloy **battery** anode rapid cooling; lithium **battery** anode silicon tin alloy; acid treatment oxide removal alloy **battery** anode

IT Secondary batteries
(lithium; manuf. of silicon-tin-based alloy for nonaq. electrolyte secondary **battery** anode by rapid cooling)

IT **Battery** anodes
Cooling
Pickling
(manuf. of silicon-tin-based alloy for nonaq. electrolyte secondary **battery** anode by rapid cooling)

IT 12013-56-8, CaSi2 12014-85-6, Cerium silicide (CeSi2) 12017-12-8, Cobalt silicide (CoSi2) 12018-09-6, Chromium silicide (CrSi2) 12022-99-0, Iron silicide (FeSi2) 12035-57-3, NiSi **12039-83-7**,

Titanium silicide (TiSi2) 12039-87-1, Vanadium silicide (VSi2) 12039-88-2, Tungsten silicide (WSi2) 12066-83-0, Praseodymium silicide (PrSi2) 12137-04-1, Neodymium silicide (NdSi2) 12166-63-1 12201-89-7, Nickel silicide (NiSi2) 12293-65-1, Manganese silicide (Mn4Si7) 53095-77-5, Magnesium silicide (MgSi2) 117615-38-0, Copper silicide (CuSi2)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(anode alloy contg.; manuf. of silicon-tin-based alloy for nonaq. electrolyte secondary **battery** anode by rapid cooling)

IT 113320-53-9 186143-06-6 253344-64-8 361445-59-2 361445-60-5 361445-61-6 361445-62-7 361445-63-8 361445-64-9 361445-65-0 361445-66-1 361445-67-2 361445-68-3 361445-69-4 361445-70-7 361445-71-8 361445-72-9 361445-80-9 361445-81-0 361445-82-1 361445-83-2 361445-84-3
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of silicon-tin-based alloy for nonaq. electrolyte secondary **battery** anode by rapid cooling)

IT 7647-01-0, Hydrochloric acid, uses 138906-19-1, Hydrofluoric acid mixt. with nitric acid
RL: NUU (Other use, unclassified); USES (Uses)
(picking soln.; manuf. of silicon-tin-based alloy for nonaq. electrolyte secondary **battery** anode by rapid cooling)

L10 ANSWER 13 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:677124 CAPLUS
DOCUMENT NUMBER: 135:213522
TITLE: Secondary nonaqueous electrolyte batteries
INVENTOR(S): Kasamatsu, Shinji; Shimamura, Harunari; Nitta, Yoshiaki
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001067528	A1	20010913	WO 2001-JP1747	20010306
W: CN, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
JP 2001325958	A2	20011122	JP 2001-58323	20010302
US 2003096168	A1	20030522	US 2002-220885	20020905

PRIORITY APPLN. INFO.: JP 2000-61483 A 20000307
JP 2001-58323 A 20010302
WO 2001-JP1747 W 20010306
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ST secondary lithium **battery** anode particle coating; silicon particle intermetallic compd coating **battery** anode; tin particle intermetallic compd coating **battery** anode; size ratio **battery** anode active mass conductor

IT **Battery** anodes
(anodes from lithium intercalating particles with solid soln. or intermetallic compd. coatings for secondary lithium batteries)

IT 1313-08-2 7440-21-3, Silicon, uses 7440-31-5, Tin, uses **12039-83-7**, Titanium silicide (TiSi2) 12201-89-7, Nickel silicide (NiSi2) 12510-35-9 77137-25-8, Titanium silicide (Ti2Si)
RL: DEV (Device component use); USES (Uses)
(anodes from lithium intercalating particles with solid soln. or

intermetallic compd. coatings for secondary lithium batteries)

L10 ANSWER 14 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:673661 CAPLUS
DOCUMENT NUMBER: 135:244983
TITLE: Anode materials for secondary nonaqueous electrolyte batteries
INVENTOR(S): Uenaka, Hideya; Negi, Noriyuki; Takeshita, Yukiteru; Kohiyori, Motoji; Yonemura, Koji; Nitta, Yoshiaki; Shimamura, Harushige
PATENT ASSIGNEE(S): Sumitomo Metal Industries Ltd., Japan; Matsushita Electric Industrial Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001250540	A2	20010914	JP 2000-59855	20000306

PRIORITY APPLN. INFO.: JP 2000-59855 20000306
ST lithium nonaq electrolyte **battery** anode alloy; intermetallic alloy anode lithium **battery**
IT **Battery** anodes
(intermetallic phase-contg. Si alloy anodes for secondary nonaq. electrolyte Li batteries)
IT 12017-12-8, Cobalt silicide (CoSi2) 12035-57-3, Nickel silicide (NiSi) **12039-83-7**, Titanium silicide (TiSi2) 12039-87-1, Vanadium silicide (VSi2) 12201-89-7, Nickel silicide (NiSi2) 151819-07-7 169217-08-7 359860-38-1 359860-39-2
RL: DEV (Device component use); USES (Uses)
(intermetallic phase-contg. Si alloy anodes for secondary nonaq. electrolyte Li batteries)

L10 ANSWER 15 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:564104 CAPLUS
DOCUMENT NUMBER: 135:139838
TITLE: Nonaqueous electrolyte secondary batteries with excellent cycle characteristics
INVENTOR(S): Nitta, Yoshiaki; Shimamura, Harunari; Kasamatsu, Shinji; Koshina, Shigeru
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001210323	A2	20010803	JP 2000-16737	20000126

PRIORITY APPLN. INFO.: JP 2000-16737 20000126
AB The **battery** comprises a nonaq. electrolyte, a Li-intercalating cathode, and a Si-contg. Li-intercalating anode consisting of sintered composites of alloy particles, graphite particles, and carbonaceous particles and having certain pore vol. The alloy particles in the anodes may esp. comprise Si-contg. cores having coatings of solid soln. or intermetallic compds. of Si with .gtoreq.1 element(s) selected from transition metals, Group 2, 12, 13, and 14 elements excluding carbon. Liq. junction in the cathode is maintained during expansion by intercalation of lithium.

ST nonaq electrolyte lithium secondary **battery** anode; anode sintered composite silicon cored particle; graphite silicon cored particle sinter anode; carbonaceous silicon cored particle sinter anode

IT **Battery** anodes
(nonaq. electrolyte lithium secondary batteries with sintered composite anodes comprising carbonaceous particles, graphite particles, and silicon-cored intermetallic compd. or solid soln. particles)

IT 12017-12-8, Cobalt silicide (CoSi2) **12039-83-7**, Titanium silicide (TiSi2) 12201-89-7, Nickel silicide (NiSi2) 22831-39-6, Magnesium silicide (Mg2Si) 90157-90-7, Vanadium silicide (VSi3) 298700-26-2, Manganese silicide (MnSi1.8)
RL: DEV (Device component use); USES (Uses)
(Si-cored particle surface; nonaq. electrolyte lithium secondary batteries with sintered composite anodes comprising carbonaceous particles, graphite particles, and silicon-cored intermetallic compd. or solid soln. particles)

L10 ANSWER 16 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:451044 CAPLUS
DOCUMENT NUMBER: 135:35212
TITLE: Secondary **battery** with anode containing silicon or a silicon compound
INVENTOR(S): Ito, Hidetoshi
PATENT ASSIGNEE(S): Sony Corporation, Japan
SOURCE: Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1109243	A2	20010620	EP 2000-127375	20001213
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001176545	A2	20010629	JP 1999-354706	19991214
US 2001016281	A1	20010823	US 2000-733454	20001208

PRIORITY APPLN. INFO.: JP 1999-354706 A 19991214
OTHER SOURCE(S): MARPAT 135:35212

TI Secondary **battery** with anode containing silicon or a silicon compound

AB Disclosed is a secondary **battery** capable of obtaining high energy d. and having improved charging/discharging cycle characteristics and shelf stability characteristics. A rolled electrode body obtained by rolling strip-shaped pos. and neg. electrodes via separators is provided on the inside of a **battery** can. The neg. electrode contains silicon or a silicon compd. The separators are impregnated with a liq. electrolyte. The electrolyte contains LiN(CF3SO2)2, LiC(CF3SO2)3, or the like and concn. of at least one of LiPF6, LiBF4, and LiAsF6 in the electrolyte is lower than 0.1 mol/dm3. Prodn. of hydrogen fluoride causing decompn. of LiPF6, LiBF4, or LiAsF6 can be suppressed and the concn. of hydrogen fluoride in the electrolyte can be suppressed. Thus, deactivation of the neg. electrode is prevented.

ST **battery** anode silicon compd

IT **Battery** anodes
Secondary batteries
(secondary **battery** with anode contg. silicon or silicon compd.)

IT Carbon black, uses
Carbonaceous materials (technological products)
Coke
RL: MOA (Modifier or additive use); USES (Uses)
(secondary **battery** with anode contg. silicon or silicon

compd.)
IT Petroleum coke
RL: RCT (Reactant); RACT (Reactant or reagent)
(secondary **battery** with anode contg. silicon or silicon compd.)
IT 7440-44-0, Carbon, uses
RL: MOA (Modifier or additive use); USES (Uses)
(pyrolytic; secondary **battery** with anode contg. silicon or silicon compd.)
IT 409-21-2, Silicon carbide sic, uses 7429-90-5, Aluminum, uses 7440-21-3, Silicon, uses 7631-86-9, Silica, uses 12007-81-7, silicon boride sib4 12008-29-6, silicon boride sib6 12013-56-8, calcium silicide casi2 12017-12-8, cobalt silicide cosi2 12018-09-6, chromium silicide crsi2 12022-99-0, iron silicide fesi2 12032-86-9, manganese silicide mnsi2 12033-76-0, silicon nitride oxide si2n2O 12033-89-5, silicon nitride si3n4, uses **12034-80-9**, niobium silicide nbsi2 **12039-79-1**, tantalum silicide tasi2 **12039-83-7**, titanium silicide tisi2 12039-87-1, vanadium silicide vsi2 12039-88-2, tungsten silicide wsi2 12057-17-9, lithium manganese oxide limn2o4 12136-78-6, molybdenum silicide mosi2 12159-07-8, copper silicide cu5si 12190-79-3, cobalt lithium oxide colio2 12201-89-7, nickel silicide nisi2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 22831-39-6, magnesium silicide mg2si 29935-35-1, Lithium hexafluoroarsenate 90076-65-6 113443-18-8, Silicon oxide (SiO) 131344-56-4, Cobalt lithium nickel oxide 132404-42-3 132843-44-8 204450-96-4, Chromium lithium manganese oxide 210406-60-3 339333-78-7, zinc silicide znsi2 343770-50-3, Copper silicide (Cu5Si2)
RL: DEV (Device component use); USES (Uses)
(secondary **battery** with anode contg. silicon or silicon compd.)
IT 7664-39-3, Hydrogen fluoride, uses 7782-42-5, Graphite, uses
RL: MOA (Modifier or additive use); USES (Uses)
(secondary **battery** with anode contg. silicon or silicon compd.)

L10 ANSWER 17 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:388984 CAPLUS
DOCUMENT NUMBER: 135:7766
TITLE: Silicon alloy or zinc alloy for anode of secondary nonaqueous electrolyte **battery** and its manufacture
INVENTOR(S): Shimamura, Harunari; Nitta, Yoshiaki; Negi, Noriyuki; Uenaka, Hideya
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan; Sumitomo Metal Industries, Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001148247	A2	20010529	JP 1999-330096	19991119

PRIORITY APPLN. INFO.: JP 1999-330096 19991119
TI Silicon alloy or zinc alloy for anode of secondary nonaqueous electrolyte **battery** and its manufacture
AB The alloy comprises A phase (core) contg. Si and/or Zn and B phase which surrounds at least part of the A phase. The B phase comprises intermetallic compds. or solid solns. of (a) Si and/or Zn and (b) .gtoreq.1 element selected from alk. earth metals, transition metals (Group IIIB to IIB elements), Group IIIA element, Group IVA element excluding C, and Group VA element. The alloy is manufd. by solidifying

molten raw materials at solidification rate .gtoreq.100.degree./s and then immersing the obtained alloy in an acid soln. for removal of surface oxide layers. The alloy has high Li-intercalation capacity and shows suppressed vol. change during the intercalation, and the **battery** has high charge/discharge efficiency and long cycle life.

ST silicon alloy anode lithium intercalation nonaq electrolyte **battery**; zinc alloy anode lithium intercalation nonaq electrolyte **battery**; oxide layer removal alloy anode nonaq electrolyte **battery**

IT **Battery** anodes
(quick solidification and oxide layer removal for manufg. Li-intercalatable Si- or Zi-alloy with suppressed vol. change for nonaq. electrolyte **battery** anode)

IT 7440-21-3P, Silicon, uses 7440-66-6P, Zinc, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(A phase; quick solidification and oxide layer removal for manufg. Li-intercalatable Si- or Zi-alloy with suppressed vol. change for nonaq. electrolyte **battery** anode)

IT 11133-86-1P 12013-56-8P, CaSi2 12014-85-6P, Cerium silicide (CeSi2) 12017-12-8P, Cobalt silicide (CoSi2) 12018-09-6P, Chromium silicide (CrSi2) 12022-99-0P, Iron silicide (FeSi2) 12035-57-3P, NiSi **12039-83-7P**, Titanium silicide (TiSi2) 12039-87-1P, Vanadium silicide (VSi2) 12039-88-2P, Tungsten silicide (WSi2) 12066-83-0P, Praseodymium silicide (PrSi2) 12137-04-1P, Neodymium silicide (NdSi2) 12201-89-7P, Nickel silicide (NiSi2) 12293-65-1P, Manganese silicide (Mn4Si7) 12621-78-2P 12635-57-3P 53095-77-5P, Magnesium silicide (MgSi2) 55350-61-3P 69623-51-4P 96755-45-2P 117615-38-0P, Copper silicide (CuSi2) 123188-80-7P, MgZn11 341026-25-3P
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(B phase; quick solidification and oxide layer removal for manufg. Li-intercalatable Si- or Zi-alloy with suppressed vol. change for nonaq. electrolyte **battery** anode)

IT 39428-91-6P 42611-25-6P 54134-24-6P 58923-90-3P 69030-03-1P 76918-47-3P 107614-61-9P 117937-72-1P 123460-31-1P 129677-38-9P 131437-93-9P 169217-08-7P 217196-42-4P 332387-65-2P 341026-05-9P 341026-06-0P 341026-07-1P 341026-08-2P 341026-09-3P 341026-10-6P 341026-11-7P 341026-12-8P 341026-13-9P 341026-14-0P 341026-15-1P 341026-16-2P
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(quick solidification and oxide layer removal for manufg. Li-intercalatable Si- or Zi-alloy with suppressed vol. change for nonaq. electrolyte **battery** anode)

IT 7647-01-0, Hydrochloric acid, uses 7664-39-3, Hydrogen fluoride, uses 7697-37-2, Nitric acid, uses
RL: NUU (Other use, unclassified); USES (Uses)
(quick solidification and oxide layer removal for manufg. Li-intercalatable Si- or Zi-alloy with suppressed vol. change for nonaq. electrolyte **battery** anode)

L10 ANSWER 18 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:376912 CAPLUS
DOCUMENT NUMBER: 134:355488
TITLE: Fabrication of secondary **battery** with anode containing silicon or a silicon compound
INVENTOR(S): Tanizaki, Hiroaki; Omaru, Atsuo; Imoto, Hiroshi
PATENT ASSIGNEE(S): Sony Corporation, Japan
SOURCE: Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1102340	A2	20010523	EP 2000-125015	20001116
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001148248	A2	20010529	JP 1999-331494	19991122

PRIORITY APPLN. INFO.: JP 1999-331494 A 19991122

TI Fabrication of secondary **battery** with anode containing silicon or a silicon compound

AB The title **battery** comprises a winding electrode body wound a belt-shaped cathode and a belt-shaped anode with a separator. The anode is produced with crushed Si or or a Si compd. in an O partial pressure atm. within a value from >10 Pa to lower than an O partial pressure of air. By crushing Si or a Si compd. in such an O partial pressure atm., an oxide film formed thereon can become thinner and electron cond. between its particles can be improved, which leads to an improved charging-discharging property.

ST **battery** anode silicon compd

IT Phenolic resins, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(carbon blak; fabrication of secondary **battery** with anode contg. silicon or silicon compd.)

IT **Battery** anodes
Secondary batteries
(fabrication of secondary **battery** with anode contg. silicon or silicon compd.)

IT Polypropene fibers, uses
RL: DEV (Device component use); USES (Uses)
(fabrication of secondary **battery** with anode contg. silicon or silicon compd.)

IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(phenolic resin-derived; fabrication of secondary **battery** with anode contg. silicon or silicon compd.)

IT 96-49-1, Ethylene carbonate 616-38-6, Dimethyl carbonate 7440-21-3, Silicon, uses 12190-79-3, Cobalt lithium oxide colio2 21324-40-3, Lithium hexafluorophosphate
RL: DEV (Device component use); USES (Uses)
(fabrication of secondary **battery** with anode contg. silicon or silicon compd.)

IT 409-21-2P, Silicon carbide sic, uses 12007-81-7P, Silicon boride sib4 12008-29-6P, Silicon boride sib6 12013-56-8P, Calcium silicide casi2 12017-12-8P, Cobalt silicide cosi2 12018-09-6P, Chromium silicide crsi2 12022-99-0P, Iron silicide fesi2 12032-86-9P, Manganese silicide mnsi2 **12034-80-9P**, Niobium silicide nbsi2 **12039-79-1P**, Tantalum silicide tasi2 **12039-83-7P**, Titanium silicide tisi2 12039-87-1P, Vanadium silicide vsi2 12039-88-2P, Tungsten silicide wsi2 12058-47-8P, Silicon nitride SiN4 12136-78-6P, Molybdenum silicide mosi2 12159-07-8P, Copper silicide cu5si 12201-89-7P, Nickel silicide nisi2 22831-39-6P, Magnesium silicide mg2si 339333-78-7P, Zinc silicide (ZnSi2)
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(fabrication of secondary **battery** with anode contg. silicon or silicon compd.)

IT 7440-37-1, Argon, uses 7440-59-7, Helium, uses 7727-37-9, Nitrogen, uses 7782-44-7, Oxygen, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fabrication of secondary **battery** with anode contg. silicon or silicon compd.)

L10 ANSWER 19 OF 35 CAPLUS

ACCESSION NUMBER: 2000:852884 CAPLUS
DOCUMENT NUMBER: 134:103950
TITLE: Emerging applications of intermetallics
AUTHOR(S): Stoloff, N. S.; Liu, C. T.; Deevi, S. C.
CORPORATE SOURCE: Department of Materials Science and Engineering, Rensselaer Polytechnic Institute, Troy, NY, 12180-3590, USA
SOURCE: Intermetallics (2000), 8(9-11), 1313-1320
CODEN: IERME5; ISSN: 0966-9795
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

AB A review, with 36 refs. Many intermetallic compds. display an attractive combination of phys. and mech. properties, including high m.p., low d. and good oxidn. or corrosion resistance. This has led to their utilization in many non-structural applications, but success in structural applications has, to date, been limited. This paper reviews the current status of intermetallic applications, with emphasis on new uses that are in place or pending. Most of the paper deals with aluminides and silicides, but there are several more complex intermetallics that are being employed in **battery** and magnetic applications. Research on improved processing and studies of the role of environment in mech. behavior are key to developing practical alloys.

IT 12003-42-8, Iron aluminide Fe3Al 12003-75-7 12003-96-2 12003-98-4 12018-17-6 12018-36-9, Chromium silicide (Cr3Si) 12035-03-9, Niobium silicide (Nb3Si) 12042-17-0, Iron aluminide FeAl **12060-34-3**, Niobium silicide (Nb5Si3) 12201-89-7, Nickel silicide (NiSi2)
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(emerging applications of intermetallics)

L10 ANSWER 20 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:824573 CAPLUS
DOCUMENT NUMBER: 133:364471
TITLE: Secondary **battery** electrode collectors, the batteries, and manufacture of the batteries
INVENTOR(S): Kurisawa, Isamu
PATENT ASSIGNEE(S): Japan Storage Battery Co., Ltd., Japan
SOURCE: PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000070696	A1	20001123	WO 2000-JP3145	20000517
W: DE, JP, US				
DE 10081688	T	20011004	DE 2000-10081688	20000517

PRIORITY APPLN. INFO.: JP 1999-137876 A 19990518
WO 2000-JP3145 W 20000517
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Secondary **battery** electrode collectors, the batteries, and manufacture of the batteries

ST lead **battery** electrode collector conductive ceramic coating; plasma CVD lead **battery** electrode collector coating; sputtering lead **battery** electrode collector coating

IT **Battery** electrodes
(manuf. of conductive ceramic coated metal electrode substrates for lead acid batteries)

IT **12034-80-9**, Niobium silicide (NbSi2) **12039-79-1**, Tantalum silicide (TaSi2) **12039-83-7**, Titanium silicide (TiSi2) **12060-34-3**, Niobium silicide (Nb5Si3) **12067-56-0**, Tantalum silicide (Ta5Si3) **12067-57-1**, Titanium silicide (Ti5Si3) 18282-10-5, Tin dioxide
RL: MOA (Modifier or additive use); USES (Uses)
(manuf. of conductive ceramic coated metal electrode substrates for lead acid batteries)

L10 ANSWER 21 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:749113 CAPLUS
DOCUMENT NUMBER: 133:337686
TITLE: Lithium secondary **battery**
INVENTOR(S): Hasegawa, Masaki; Yamaura, Junichi; Fujino, Makoto; Tsutsumi, Shuji; Kondo, Shigeo
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000299107	A2	20001024	JP 1999-106256	19990414

PRIORITY APPLN. INFO.: JP 1999-106256 19990414

TI Lithium secondary **battery**

AB Either both pos. and neg. electrodes or one of the two electrodes which is made from nonoxide conductive ceramic powders is used in the lithium secondary **battery**. The ceramic is selected from nitrides, borides, silicides or carbides of group 4B, 5B, and 6B elements. Gas evolution from the pole plate during the time of discharge and charge of the lithium and the time of storage are retarded.

ST lithium secondary **battery** nonoxide conductive ceramic electrode

IT Group VA element compounds
Group VA element compounds
RL: DEV (Device component use); USES (Uses)
(Group IIB element silicides; lithium secondary **battery** electrode manufd. from)

IT Transition metal borides
Transition metal borides
RL: DEV (Device component use); USES (Uses)
(Group IVB element; lithium secondary **battery** electrode manufd. from)

IT Group IIB element compounds
Group IIB element compounds
RL: DEV (Device component use); USES (Uses)
(Group VA element silicides; lithium secondary **battery** electrode manufd. from)

IT Transition metal borides
Transition metal borides
RL: DEV (Device component use); USES (Uses)
(Group VB element; lithium secondary **battery** electrode manufd. from)

IT Transition metal borides
Transition metal borides
Transition metal nitrides
Transition metal nitrides
RL: DEV (Device component use); USES (Uses)
(Group VIB element; lithium secondary **battery** electrode manufd. from)

IT Group IVB element compounds
Group IVB element compounds

Group VB element compounds
Group VB element compounds
Group VIB element compounds
Group VIB element compounds
RL: DEV (Device component use); USES (Uses)
(borides; lithium secondary **battery** electrode manufd. from)

IT Group IVB element carbides
Group IVB element nitrides
Group VB element carbides
Group VB element nitrides
Group VIB element carbides
RL: DEV (Device component use); USES (Uses)
(lithium secondary **battery** electrode manufd. from)

IT **Battery** electrodes
(lithium secondary **battery** electrode manufd. from nonoxide ceramics)

IT Group VIB element compounds
Group VIB element compounds
RL: DEV (Device component use); USES (Uses)
(nitrides; lithium secondary **battery** electrode manufd. from)

IT 12006-79-0, Chromium boride CrB 12006-98-3, Molybdenum boride MoB 12007-29-3, Niobium borideNbB2 12007-35-1, Tantalum boride TaB2 12018-09-6, Chromium silicide CrSi2 12033-62-4, Tantalum nitride **12034-80-9**, Niobium silicide NbSi2 **12039-79-1**, Tantalum silicide TaSi2 **12039-83-7**, Titanium silicide TiSi2 12039-88-2, Tungsten silicide 12039-90-6, Zirconium silicide ZrSi2 12045-63-5, Titanium boride 12045-64-6, Zirconium boride 12069-94-2, Niobium carbide 12070-06-3, Tantalum carbide 12070-08-5, Titanium carbide 12070-10-9, Vanadium carbide 12070-12-1, Tungsten carbide 12070-14-3, Zirconium carbide 12136-78-6, Molybdenum silicide MoSi2 12627-57-5, Molybdenum carbide 12705-37-2, Chromium nitride 24646-85-3, Vanadium nitride 25583-20-4, Titanium nitride 25658-42-8, Zirconium nitride
RL: DEV (Device component use); USES (Uses)
(lithium secondary **battery** electrode manufd. from)

L10 ANSWER 22 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:741173 CAPLUS
DOCUMENT NUMBER: 133:290040
TITLE: **Battery**-driven thin film gas sensor showing low consumption
INVENTOR(S): Tsuda, Koichi; Onodera, Katsuki; Suzuki, Takaya; Inoue, Fumihiro; Kochiwa, Shinichi
PATENT ASSIGNEE(S): Fuji Electric Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000292396	A2	20001020	JP 1999-96272	19990402

PRIORITY APPLN. INFO.: JP 1999-96272 19990402

TI **Battery**-driven thin film gas sensor showing low consumption
ST **battery** driven gas sensor consumption redn; titanium silicide heater film gas sensor; niobium nitride leading part gas sensor

IT Gas sensors
(thin-film; **battery**-driven thin film gas sensor showing low consumption)

IT 12033-89-5, Silicon nitride, uses
RL: DEV (Device component use); USES (Uses)
(elec. insulating film; **battery**-driven thin film gas sensor showing low consumption)

IT 12007-23-7, Hafnium boride (HfB2) **12039-83-7**, Titanium silicide (TiSi2)
RL: DEV (Device component use); USES (Uses)
(heater; **battery**-driven thin film gas sensor showing low consumption)
IT 7440-06-4, Platinum, uses 12033-62-4, Tantalum nitride 12647-03-9 12649-48-8 24621-21-4, Niobium nitride
RL: DEV (Device component use); USES (Uses)
(leading part; **battery**-driven thin film gas sensor showing low consumption)

L10 ANSWER 23 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:278210 CAPLUS
DOCUMENT NUMBER: 132:281689
TITLE: Secondary nonaqueous electrolyte batteries
INVENTOR(S): Bito, Yasuhiko; Sato, Toshitada; Matsuda, Hiromu; Toyoguchi, Yoshinori; Nakagiri, Yasushi; Takezawa, Hideharu
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000024070	A1	20000427	WO 1999-JP5805	19991020
W: US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 2000133260	A2	20000512	JP 1998-300547	19981022
JP 2000133261	A2	20000512	JP 1998-302466	19981023
JP 2001068112	A2	20010316	JP 1999-244061	19990830
JP 2001076719	A2	20010323	JP 1999-246273	19990831
JP 2001093524	A2	20010406	JP 1999-270703	19990924
EP 1043789	A1	20001011	EP 1999-949336	19991020
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
US 6265111	B1	20010724	US 2000-598206	20000621

PRIORITY APPLN. INFO.:
JP 1998-300547 A 19981022
JP 1998-302466 A 19981023
JP 1999-244061 A 19990830
JP 1999-246273 A 19990831
JP 1999-270703 A 19990924
WO 1999-JP5805 W 19991020

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ST **battery** anode lithium alloy compn
IT **Battery** anodes
(compns. of multiphase lithium intercalating alloys for anodes in secondary lithium batteries)
IT 1310-52-7 1313-08-2 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-21-3, Silicon, uses 7440-31-5, Tin, uses 7440-33-7, Tungsten, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-62-2, Vanadium, uses 11130-80-6 12003-14-4 12003-21-3 12003-42-8 12003-64-4 12003-70-2 12003-96-2 12004-15-8 12004-32-9 12004-58-9 12004-62-5 12004-78-3 12009-35-7, Barium silicide (BaSi) 12017-11-7, Cobalt silicide (CoSi) 12017-12-8, Cobalt silicide (CoSi2) 12019-61-3 12019-69-1 12022-95-6, Iron silicide (FeSi) 12022-99-0, Iron silicide (FeSi2) 12023-00-6 12023-54-0, Iron silicide (Fe3Si) 12023-56-2

12023-77-7, Iron silicide (Fe5Si3) 12032-85-8, Manganese silicide (MnSi)
12032-86-9, Manganese silicide (MnSi2) 12032-87-0 12033-06-6
12033-10-2, Manganese silicide (Mn5Si3) 12033-37-3, Molybdenum silicide
(Mo3Si) 12035-57-3, Nickel silicide (NiSi) 12039-70-2, Titanium
silicide (TiSi) 12039-75-7, Vanadium silicide (VSi) 12039-76-8,
Vanadium silicide (V3Si) **12039-83-7**, Titanium silicide (TiSi2)
12039-87-1, Vanadium silicide (VSi2) 12039-90-6, Zirconium silicide
(ZrSi2) 12042-17-0 12054-11-4 12059-11-9 12059-14-2, Nickel
silicide (Ni2Si) 12059-23-3 12059-24-4 **12067-57-1**, Titanium
silicide (Ti5Si3) 12136-73-1, Manganese silicide (Mn2Si) 12138-25-9,
Vanadium silicide (V2Si) 12138-26-0, Zirconium silicide (ZrSi)
12138-32-8 12163-59-6, Manganese silicide (Mn3Si) 12166-59-5
12166-60-8 12166-63-1 12201-89-7, Nickel silicide (NiSi2) 12202-01-6
12252-30-1 12253-13-3 12253-45-1 12297-65-3 12339-84-3
12343-95-2, Iron silicide (Fe2Si) 12394-61-5 12396-85-9, Nickel
silicide (Ni3Si2) 12410-47-8, Cobalt silicide (Co3Si) 12413-12-6
12510-35-9 12629-48-0 12725-82-5 12763-92-7 39438-57-8, Iron
silicide (Fe3Si2) 39445-33-5 54065-12-2 60874-28-4, Iron molybdenum
silicide (FeMoSi) 77137-25-8, Titanium silicide (Ti2Si) 78983-55-8
86116-27-0 91607-16-8 93508-85-1 141616-89-9 210885-32-8
264124-69-8 264124-70-1 264124-71-2 264124-72-3 264124-74-5
264124-75-6 264124-76-7 264124-77-8 264124-79-0 264124-80-3
264124-81-4 264124-82-5 264124-90-5, Zirconium silicide (Zr0.8Si)
264124-96-1, Vanadium silicide (V3Si2) 264125-08-8, Cobalt silicide
(Co3Si2) **264125-13-5**, Barium titanium silicide (BaTi2Si2)
264125-17-9 264125-18-0
RL: DEV (Device component use); USES (Uses)
(compns. of multiphase lithium intercalating alloys for anodes in
secondary lithium batteries)

L10 ANSWER 24 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:176060 CAPLUS
DOCUMENT NUMBER: 132:196774
TITLE: Anode materials for secondary nonaqueous electrolyte batteries and their manufacture
INVENTOR(S): Kaminaka, Hideya; Abe, Masaru; Negi, Noriyuki; Nitta, Yoshiaki; Shimamura, Harunari; Okamura, Kazuhiro
PATENT ASSIGNEE(S): Sumitomo Metal Industries, Ltd., Japan; Matsushita Electric Industrial Co., Ltd.
SOURCE: PCT Int. Appl., 47 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000014817	A1	20000316	WO 1999-JP4775	19990903
W: CN, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 2000149937	A2	20000530	JP 1999-249017	19990902
EP 1028476	A1	20000816	EP 1999-940637	19990903
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: JP 1998-253981 A 19980908
WO 1999-JP4775 W 19990903
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
ST **battery** anode silicon alloy structure manuf
IT **Battery** anodes
(silicon alloys contg. silicon solid soln. or intermetallic compd. covered silicon grains for secondary lithium **battery** anodes)

IT 12013-56-8, CaSi2 12014-85-6, Cerium silicide (CeSi2) 12017-12-8, Cobalt silicide (CoSi2) 12018-09-6, Chromium silicide (CrSi2) 12022-99-0, Iron silicide (FeSi2) **12039-83-7**, Titanium silicide (TiSi2) 12039-88-2, Tungsten silicide (WSi2) 12066-83-0, Praseodymium silicide (PrSi2) 12137-04-1, Neodymium silicide (NdSi2) 12201-89-7, Nickel silicide (NiSi2) 12293-65-1, Manganese silicide (Mn4Si7) 53095-77-5, Magnesium silicide (MgSi2) 117615-38-0, Copper silicide (CuSi2)
RL: MOA (Modifier or additive use); USES (Uses)
(silicon alloys contg. intermetallic compd. covered silicon grains for secondary lithium **battery** anodes)

IT 11099-22-2 69255-78-3
RL: MOA (Modifier or additive use); USES (Uses)
(silicon alloys contg. silicon solid soln. covered silicon grains for secondary lithium **battery** anodes)

IT 72073-64-4P 94984-43-7P 117937-72-1P 126500-58-1P 126500-60-5P 152142-58-0P 169217-08-7P 195060-07-2P 223516-45-8P 259750-69-1P 259750-70-4P 259750-71-5P 259750-72-6P 259750-73-7P 259750-74-8P 259750-75-9P 259750-76-0P 259750-77-1P 259750-78-2P 259750-79-3P 259750-80-6P
RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)
(silicon alloys contg. silicon solid soln. or intermetallic compd. covered silicon grains for secondary lithium **battery** anodes)

L10 ANSWER 25 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:758891 CAPLUS
DOCUMENT NUMBER: 130:54865
TITLE: Anode materials containing silicon alloys for lithium ion secondary batteries and their manufacture
INVENTOR(S): Negi, Noriyuki; Uenaka, Shusai; Abe, Satoshi; Asabe, Kazutaka
PATENT ASSIGNEE(S): Sumitomo Metal Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10312804	A2	19981124	JP 1997-120985	19970512
JP 3277845	B2	20020422		

PRIORITY APPLN. INFO.: JP 1997-120985 19970512
ST silicon alloy intermetallic compd anode **battery**; casting silicon alloy intermetallic compd anode
IT **Battery** anodes
Casting of metals
Cooling
Heat treatment
(Si alloys having AB2 phase manufd. by casting and heat treatment for lithium ion batteries)

IT 12014-85-6P, Cerium silicide (CeSi2) 12017-12-8P, Cobalt silicide (CoSi2) 12018-09-6P, Chromium silicide (CrSi2) 12022-99-0P, Iron silicide (FeSi2) 12032-86-9P, Manganese silicide (MnSi2) **12034-80-9P**, Niobium silicide (NbSi2) **12039-79-1P**, Tantalum silicide (TaSi2) **12039-83-7P**, Titanium silicide (TiSi2) 12039-87-1P, Vanadium silicide (VSi2) 12039-88-2P, Tungsten silicide (WSi2) 12039-90-6P, Zirconium silicide (ZrSi2) 12056-90-5P, Lanthanum silicide (LaSi2) 12066-83-0P, Praseodymium silicide (PrSi2) 12136-78-6P, Molybdenum silicide (MoSi2) 12201-89-7P, Nickel silicide (NiSi2) 117615-38-0P, Copper silicide (CuSi2)
RL: DEV (Device component use); IMF (Industrial manufacture); PREP

(Preparation); USES (Uses)
(Si alloys having AB2 phase manufd. by casting and heat treatment for lithium ion batteries)

L10 ANSWER 26 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:474026 CAPLUS
DOCUMENT NUMBER: 129:151119
TITLE: Secondary nonaqueous-electrolyte **battery**
INVENTOR(S): Ito, Shuji; Murata, Toshihide; Bito, Yasuhiko; Toyoguchi, Yoshinori
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 51 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 853347	A1	19980715	EP 1997-122297	19971217
EP 853347	B1	20011024		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 10255796	A2	19980925	JP 1997-54947	19970310
JP 3426901	B2	20030714		
JP 10233208	A2	19980902	JP 1997-163285	19970604
JP 3390327	B2	20030324		
US 6124057	A	20000926	US 1997-993735	19971218

PRIORITY APPLN. INFO.: JP 1996-341012 A 19961220
JP 1997-54947 A 19970310
JP 1997-163285 A 19970604
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Secondary nonaqueous-electrolyte **battery**
AB The anode active material of the title **battery** having a high capacity and excellent cycling characteristics comprises a salt of a metal or a semimetal and a compd. selected from the oxo acids, HSCN, NCCN, and HCNO, where each oxo acid comprises an element selected N, S, C, B, P, Se, Te, W, Mo, Ti, Cr, Zr, Nb, Ta, Mn, and V, the salts of the oxo acids of P and B being restricted to hydrogen phosphates and hydrogen borates.
ST nonaq electrolyte **battery** anode metal salt; semimetal salt nonaq electrolyte **battery** anode; oxo acid salt **battery** anode; thiocyanic acid salt **battery** anode; cyanogen salt **battery** anode; cyanic acid salt **battery** anode
IT **Battery** anodes
(of metal or semimetal salts of cyanic acid or cyanogen or oxo acids or thiocyanic acid)
IT 210909-54-9, Antimony chromium oxide (Sb2Cr3O12) 210909-56-1, Chromium gallium oxide (Cr2Ga3O8) 210909-58-3, Chromium germanium oxide (CrGeO4) 210909-59-4, Chromium magnesium oxide (Cr2MgO7) 210909-62-9, Calcium chromium oxide (CaCr2O7) 210909-65-2, Chromium strontium oxide (Cr2SrO7) 210909-75-4, Germanium niobium oxide (GeNb2O6) **210909-76-5**, Tantalum oxide silicate (Ta2O(SiO3)2) 210909-77-6, Germanium tantalum oxide (Ge2Ta2O7) 210909-78-7, Aluminum manganese oxide (Al2MnO6) 210909-80-1, Bismuth manganese oxide (Bi2MnO6) 210909-81-2, Indium manganese oxide (In2MnO6)
RL: DEV (Device component use); USES (Uses)
(anode active material for lithium-ion batteries)
IT 130811-82-4P, Cobalt lithium manganese oxide (Co0.2LiMn1.8O4)
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(**battery** cathodes)

L10 ANSWER 27 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:198113 CAPLUS
DOCUMENT NUMBER: 128:232837
TITLE: Lithium secondary batteries with cathodes containing composite conductive agents
INVENTOR(S): Yoshikawa, Masanori; Igawa, Akiko; Yamauchi, Shuko; Ando, Kotobuki; Muranaka, Kiyoshi; Dozono, Toshinori
PATENT ASSIGNEE(S): Hitachi, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10083818	A2	19980331	JP 1996-236160	19960906

PRIORITY APPLN. INFO.: JP 1996-236160 19960906
ST graphite composite conductive agent cathode; oxide composite conductive agent cathode; nitride composite conductive agent cathode; carbide composite conductive agent cathode; boride composite conductive agent cathode; silicide composite conductive agent cathode; lithium **battery** carbon composite conductive agent
IT **Battery** cathodes
(cathodes contg. metal compd./carbon composites as conductive agents for lithium batteries)
IT 409-21-2, Silicon carbide (SiC), uses 1308-38-9, Chromia, uses 1314-15-4, Platinum oxide (PtO2) 1314-28-9, Rhenium oxide (ReO3) 1314-34-7, Vanadium oxide (V2O3) 1317-61-9, Iron oxide (Fe3O4), uses 7782-42-5, Graphite, uses 10043-11-5, Boron nitride (BN), uses 12006-98-3, Molybdenum boride (MoB) 12007-07-7, Tantalum boride (TaB) 12007-16-8, Chromium boride (CrB2) 12007-23-7, Hafnium boride (HfB2) 12011-97-1, Molybdenum carbide (MoC) 12030-49-8, Iridium oxide (IrO2) 12033-63-5, Tantalum nitride (Ta2N) 12034-57-0, Niobium oxide (NbO) 12034-59-2, Niobium oxide (NbO2) **12034-80-9**, Niobium silicide (NbSi2) 12036-02-1, Osmium oxide (OsO2) 12036-09-8, Rhenium oxide (ReO2) 12036-10-1, Ruthenium oxide (RuO2) 12036-22-5, Tungsten oxide (WO2) 12037-05-7, Vanadium oxide (V4O7) 12037-16-0, Vanadium oxide (V5O9) 12037-30-8, Vanadium oxide (V6O11) 12037-43-3, Vanadium oxide (V7O13) 12037-57-9, Tungsten oxide (W18O49) **12039-79-1**, Tantalum silicide (TaSi2) **12039-83-7**, Titanium silicide (TiSi2) 12039-87-1, Vanadium silicide (VSi2) 12039-88-2, Tungsten silicide (WSi2) 12045-19-1, Niobium boride (NbB) 12045-63-5, Titanium boride (TiB2) 12045-64-6, Zirconium boride (ZrB2) 12069-32-8, Boron carbide (B4C) 12069-85-1, Hafnium carbide (HfC) 12069-94-2, Niobium carbide (NbC) 12070-06-3, Tantalum carbide (TaC) 12070-08-5, Titanium carbide (TiC) 12070-10-9, Vanadium carbide (VC) 12070-12-1, Tungsten carbide (WC) 12070-14-3, Zirconium carbide (ZrC) 12136-78-6, Molybdenum silicide (MoSi2) 12137-27-8, Rhodium oxide (RhO2) 12143-55-4, Titanium oxide (Ti4O7) 12165-50-3, Vanadium oxide (V8O15) 18868-43-4, Molybdenum oxide (MoO2) 24621-21-4, Niobium nitride (NbN) 24646-85-3, Vanadium nitride (VN) 25583-20-4, Titanium nitride (TiN) 25658-42-8, Zirconium nitride (ZrN) 39350-97-5, Vanadium oxide (V6O)
RL: DEV (Device component use); USES (Uses)
(conductive agents; cathodes contg. metal compd./carbon composites for lithium batteries)

L10 ANSWER 28 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:153196 CAPLUS
DOCUMENT NUMBER: 128:206745
TITLE: Substrate materials for bipolar lead/acid batteries
AUTHOR(S): Kao, Wen-Hong
CORPORATE SOURCE: 5757 N. Green Bay Avenue, MS B-5, Advanced Battery

Research, Johnson Controls Battery Group, Inc., Milwaukee, USA
SOURCE: Journal of Power Sources (1998), 70(1), 8-15
CODEN: JPSODZ; ISSN: 0378-7753
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

AB Attempting to develop a composite substrate for a bipolar lead/acid **battery**, more than 120 ceramic materials were screened. About 60 of them having a cond. greater than 10 .OMEGA.-1 cm-1 and cost less than US$ 1/g were tested. Test methods and devices were developed to examine the chem. and electrochem. stability of the filler materials, oxygen and hydrogen overpotential, and porosity of a composite substrate made of polyethylene with dispersion of the conductive filler. Very few of the ceramic materials we tested possess the desired stability, high oxygen/hydrogen overpotential and imperviousness to the acid electrolyte. Silicides of Ti, Nb and Ta appear to be acceptable fillers for plastic composite substrates. These composite substrates, however, lacked of paste adhesion and were heavy. The properties of these conductive fillers and directions for improvement in the development of a bipolar substrate are discussed.

ST lead **battery** substrate material

IT 409-21-2, Silicon carbide sic, uses 1312-43-2, Indium oxide in2o3 1314-28-9, Rhenium trioxide 1314-35-8, Tungsten trioxide, uses 9002-88-4, Polyethylene 12006-79-0, Chromium boride crb 12006-98-3, Molybdenum boride mob 12007-07-7, Tantalum boride tab 12007-29-3, Niobium boride nbb2 12007-35-1, Tantalum boride tab2 12007-37-3, Vanadium diboride 12007-98-6, Tungsten boride w2b5 12008-21-8, Lanthanum hexaboride 12011-54-0, Boron carbide bc 12012-35-0, Chromium carbide cr3c2 12017-12-8, Cobalt silicide cosi2 12032-86-9, Manganese silicide mnsi2 12033-62-4, Tantalum nitride tan **12034-80-9**, Niobium silicide nbsi2 **12039-79-1**, Tantalum silicide tasi2 **12039-83-7**, Titanium silicide tisi2 12039-87-1, Vanadium silicide vsi2 12039-88-2, Tungsten silicide Wsi2 12039-90-6, Zirconium silicide zrsi2 12045-19-1, Niobium boride nbb 12045-63-5, Titanium boride 12045-64-6, Zirconium diboride 12056-90-5, Lanthanum silicide lasi2 **12067-56-0**, Tantalum silicide ta5si3 **12067-57-1**, Titanium silicide ti5si3 12069-89-5, Molybdenum carbide mo2c 12069-94-2, Niobium carbide nbc 12070-06-3, Tantalum carbide tac 12070-08-5, Titanium carbide tic 12070-10-9, Vanadium carbide vc 12070-12-1, Tungsten carbide wc 12070-14-3, Zirconium carbide zrc 12136-78-6, Molybdenum silicide mosi2 12159-07-8, Copper silicide cu5si 12201-89-7, Nickel silicide nisi2 13463-67-7, Titania, uses 18282-10-5, Tin dioxide 18868-43-4, Molybdenum dioxide 24094-93-7, Chromium nitride crn 24621-21-4, Niobium nitride nbn 24646-85-3, Vanadium nitride vn 25583-20-4, Titanium nitride tin 25658-42-8, Zirconium nitride zrn 25764-10-7, Lanthanum nitride lan 25764-12-9, Scandium nitride scn
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate materials for bipolar lead/acid batteries)

L10 ANSWER 29 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1996:634718 CAPLUS
DOCUMENT NUMBER: 125:253083
TITLE: Nonaqueous-electrolyte batteries with improved cathodes
INVENTOR(S): Inamasu, Tokuo; Kuryama, Kazuya; Iguchi, Takaaki
PATENT ASSIGNEE(S): Yuasa Battery Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08222219	A2	19960830	JP 1995-25069	19950214

PRIORITY APPLN. INFO.: JP 1995-25069 19950214

ST **battery** cathodes lithium oxide coating; boride coating lithium oxide cathode; carbide coating lithium oxide cathode; nitride coating lithium oxide cathode; silicide coating lithium oxide cathode; metal coating lithium oxide cathode; alloy coating lithium oxide cathode

IT Cathodes
(**battery**, cathodes from Li oxide coated with oxide or boride or carbide or nitride or silicide or metal for **battery**)

IT 12031-65-1, Lithium nickel oxide (LiNiO2) 12057-17-9, Lithium manganese oxide (LiMn2O4) 12190-79-3, Cobalt lithium oxide (CoLiO2)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(cathodes from Li oxide coated with oxide or boride or carbide or nitride or silicide or metal for **battery**)

IT 1317-61-9, Iron oxide (Fe3O4), uses 12030-49-8, Iridium oxide **12039-83-7**, Titanium silicide (TiSi2) 12045-63-5, Titanium boride 12070-08-5, Titanium carbide 25583-20-4, Titanium nitride
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(cathodes from Li oxide coated with oxide or boride or carbide or nitride or silicide or metal for **battery**)

L10 ANSWER 30 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1994:283073 CAPLUS
DOCUMENT NUMBER: 120:283073
TITLE: Chemical vapor deposition techniques for thin films of solid electrolytes and electrodes
AUTHOR(S): van Dieten, V. E. J.; Dekker, J. P.; van Zomeren, A. A.; Schoonman, J.
CORPORATE SOURCE: Lab. Appl. Inorg. Chem., Delft Univ. Technol., Delft, 2628 BL, Neth.
SOURCE: NATO ASI Series, Series E: Applied Sciences (1993), 250(Fast Ion Transport in Solids), 231-57
CODEN: NAESDI; ISSN: 0168-132X
DOCUMENT TYPE: Journal
LANGUAGE: English

ST electrochem vapor deposition yttria stabilized zirconia; CVD electrochem titanium silicide lithium **battery**

IT 7439-93-2, Lithium, uses
RL: USES (Uses)
(**battery**, electrochem. CVD of titanium silicide for)

IT 111907-48-3, Lithium titanium sulfide (Li0-1TiS2)
RL: PRP (Properties)
(characteristics of lithium **battery** contg.)

IT **12039-83-7**, Titanium disilicide
RL: PRP (Properties)
(electrochem. vapor deposition of, for lithium **battery**)

IT 7550-45-0, Titanium tetrachloride, uses
RL: USES (Uses)
(in electrochem. vapor deposition of titanium silicide for lithium **battery**)

IT 3385-94-2
RL: PRP (Properties)
(in electrochem. vapor deposition of titanium silicide for lithium **battery**)

L10 ANSWER 31 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:575089 CAPLUS
DOCUMENT NUMBER: 117:175089

TITLE: Secondary batteries with nonaqueous electrolytes
INVENTOR(S): Nakane, Ikuro; Fujita, Yasuhiro; Furukawa, Sanehiro
PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04126371	A2	19920427	JP 1990-249401	19900918

PRIORITY APPLN. INFO.: JP 1990-249401 19900918

AB The alkali or alk. earth metal anodes of the batteries comprise a substrate of intermetallic compds. of metals which do and do not electrochem. react with alkali or alk. earth metals, and the substrates are treated with alkali or alk. earth metals for absorption. Thus, TiAl was alloyed with Li, powd., mixed with a binder and compacted to give an anode for a **battery**, which showed excellent cycle characteristics.

ST **battery** anode intermetallic compd; titanium aluminide lithium **battery** anode

IT Anodes
(**battery**, lithium alloy, contg. intermetallic compds., nonaq.-electrolyte)

IT 143709-12-0 143709-13-1 **143709-14-2** 143709-15-3
143709-16-4 143709-17-5 143709-18-6 143734-29-6 143734-30-9
143776-77-6 143776-89-0 143776-90-3 143776-91-4 143776-92-5
143776-93-6 143776-94-7
RL: DEV (Device component use); USES (Uses)
(anodes, for nonaq. batteries)

L10 ANSWER 32 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1991:232057 CAPLUS
DOCUMENT NUMBER: 114:232057
TITLE: Lithium ion-conductive solid electrolyte containing lithium titanium phosphate
INVENTOR(S): Adachi, Ginya; Imanaka, Nobuhito; Aono, Hiromichi; Sugimoto, Eisuke; Sadaoka, Yoshihiko; Yasuda, Naoshi; Hara, Takeo; Nagata, Masaki
PATENT ASSIGNEE(S): Japan Synthetic Rubber Co., Ltd., Japan
SOURCE: U.S., 15 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4985317	A	19910115	US 1989-372075	19890628
JP 02148655	A2	19900607	JP 1988-302539	19881130
JP 02148656	A2	19900607	JP 1988-302540	19881130
JP 02162605	A2	19900622	JP 1988-315800	19881214
JP 03029206	A2	19910207	JP 1989-259832	19891004

PRIORITY APPLN. INFO.: JP 1988-302539 19881130
JP 1988-302540 19881130
JP 1988-315800 19881214
JP 1989-57367 19890309

ST **battery** lithium conductive solid electrolyte; phosphate titanium lithium iron electrolyte; aluminum titanium lithium phosphate electrolyte; scandium titanium lithium phosphate electrolyte; yttrium titanium lithium phosphate electrolyte; lanthanum titanium lithium phosphate electrolyte;

lanthanum titanium lithium phosphate electrolyte; silicate phosphate lithium titanium electrolyte

IT 133340-01-9, Lithium scandium titanium phosphate (Li1.1-2.9Sc0.1-1.9Ti0.1-1.9(PO4)3) 133340-02-0, Aluminum lithium titanium phosphate (Al0.1-1.9Li1.1-2.9Ti0.1-1.9(PO4)3) 133340-03-1, Iron lithium titanium phosphate (Fe0.1-1.9Li1.1-2.9Ti0.1-1.9(PO4)3) **133340-04-2**, Lithium titanium phosphate silicate (Li1.1-3.9Ti2(PO4)0.1-2.9(SiO4)0.1-2.9) 133517-12-1, Lanthanum lithium titanium phosphate (La0.1-1.9Li1.1-2.9Ti0.1-1.9(PO4)3) 133741-58-9, Lithium titanium yttrium phosphate (Li1.1-2.9Ti0.1-1.9Y0.1-1.9(PO4)3)
RL: USES (Uses)
(electrolytes, lithium ion-conductive, for small and thin batteries)

L10 ANSWER 33 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1989:577946 CAPLUS
DOCUMENT NUMBER: 111:177946
TITLE: Electrode material for use in suspension-containing secondary-**battery** half cell, the half cell, and secondary **battery** comprising the half cell
INVENTOR(S): Sonneveld, Pieter Jan
PATENT ASSIGNEE(S): Stork Screens B. V., Neth.
SOURCE: Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 330290	A1	19890830	EP 1989-200462	19890223
EP 330290	B1	19960515		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
NL 8800500	A	19890918	NL 1988-500	19880226
AT 138226	E	19960615	AT 1989-200462	19890223
US 4948682	A	19900814	US 1989-314989	19890224
CA 1324409	A1	19931116	CA 1989-591960	19890224
JP 01265457	A2	19891023	JP 1989-46350	19890227

PRIORITY APPLN. INFO.: NL 1988-500 19880226

TI Electrode material for use in suspension-containing secondary-**battery** half cell, the half cell, and secondary **battery** comprising the half cell

AB The electrode material for use in a secondary-**battery** half-cell, in which a suspension of active-mass (Zn in alk. electrolyte) particles is circulated, is a porous elec. conducting material which is coated with a layer of an elec. conducting ceramic material such as VN, NbC, NbN, TiB2, TiN, TiC, Ti5Si3, TiSi2, MgN, MgC, and Mg2Si. The porous elec. conducting material is porous glassy C or expanded metal through which the active-mass suspension can flow. The half cell comprises a casing, an electrolyte circulation means, and the invention electrode material.

ST **battery** electrode suspension electrolyte; nitride collector suspension electrode **battery**; carbide collector suspension electrode **battery**; boride collector suspension electrode **battery**; silicide collector suspension electrode **battery**; ceramic collector suspension electrode **battery**; current collector suspension electrode **battery**

IT Electrodes
(**battery**, active mass suspension in electrolyte and conducting ceramic-coated current collectors for)

IT Anodes
(**battery**, zinc, with active mass suspended in electrolyte and conducting ceramic-coated current collectors)

IT **12039-83-7**, Titanium disilicide 12045-63-5, Titanium diboride

12067-57-1, Titanium silicide (Ti5Si3) 12069-94-2, Niobium carbide (NbC) 12070-08-5, Titanium carbide (TiC) 12167-05-4, Magnesium carbide (MgC) 22831-39-6, Magnesium silicide (Mg2Si) 24621-21-4, Niobium nitride (NbN) 24646-85-3, Vanadium nitride (VN) 25583-20-4, Titanium nitride (TiN) 60195-15-5, Magnesium nitride (MgN)
RL: USES (Uses)
(electrode current collectors coated with, for batteries with suspended active mass)

L10 ANSWER 34 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1988:495902 CAPLUS
DOCUMENT NUMBER: 109:95902
TITLE: Thermodynamics of ternary systems and its application to lithium-silicon based negative electrode materials
AUTHOR(S): Anani, A. A.; Huggins, R. A.
CORPORATE SOURCE: Dep. Mater. Sci. Eng., Stanford Univ., Stanford, CA, 94305, USA
SOURCE: Proceedings - Electrochemical Society (1988), 88-6(Proc. Symp. Primary Second. Ambient Temp. Lithium Batteries, 1987), 635-58
CODEN: PESODO; ISSN: 0161-6374
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Phase diagrams and thermodn. data were used to predict the properties of a no. of ternary Li-Si-based systems for use as **battery** anodes. The applicability of this approach was tested by measurements on the Li-Si-Mg ternary system. The addn. of a 3rd component to a binary alloy electrode could result in a significant change in the thermodn. or kinetic behavior of the electrode material, depending on the relevant phase diagram and the crystal structure of the phases present. The effect of ternary phase diagram characteristics on the thermodn. properties and sp. energy of multicomponent electrode is discussed.

ST thermodn ternary system **battery** anode; lithium silicon anode ternary system; magnesium silicon lithium anode **battery**

IT Anodes
(**battery**, lithium-silicon-based ternary systems for, thermodn. of)

IT 12057-39-5, Lithium silicide (Li22Si5) 55575-96-7, Lithium silicide (Li13Si4) 74969-13-4, Lithium silicide (Li7Si3) 76036-33-4, Lithium silicide (Li12Si7)
RL: PRP (Properties)
(Gibbs free energy of, **battery** anode application in relation to)

IT 12013-55-7, Calcium silicide (CaSi) 12013-56-8, Calcium silicide (CaSi2) 12018-08-5, Chromium silicide (CrSi) 12018-09-6, Chromium silicide (CrSi2) 12018-36-9, Chromium silicide (Cr3Si) 12018-42-7, Chromium silicide (Cr5Si3) 12032-85-8, Manganese silicide (MnSi) 12033-10-2, Manganese silicide (Mn5Si3) 12033-37-3, Molybdenum silicide (Mo3Si) 12033-40-8, Molybdenum silicide (Mo5Si3) **12034-80-9**, Niobium silicide (NbSi2) 12035-57-3, Nickel silicide (NiSi) 12039-70-2, Titanium silicide (TiSi) **12039-79-1**, Tantalum silicide (TaSi2) 12039-87-1, Vanadium silicide (VSi2) 12049-73-9, Calcium silicide (Ca2Si) **12060-34-3**, Niobium silicide (Nb5Si3) **12067-56-0**, Tantalum silicide (Ta5Si3) **12067-57-1**, Titanium silicide (Ti5Si3) 12136-78-6, Molybdenum silicide (MoSi2) 12143-78-1, Vanadium silicide (V5Si3) 12163-59-6, Manganese silicide (Mn3Si) 22831-39-6, Magnesium silicide (Mg2Si) 116011-52-0, Nickel silicide (Ni7Si13)
RL: USES (Uses)
(phase, in equil. in lithium-silicon-based ternary system, **battery** anode application in relation to)

IT 7440-21-3, Silicon, properties
RL: PRP (Properties)
(systems, lithium-, ternary, thermodn. properties of, for **battery** anodes)

IT 7439-95-4, Magnesium, properties 7439-96-5, Manganese, properties
7439-98-7, Molybdenum, properties 7440-02-0, Nickel, properties
7440-03-1, Niobium, properties 7440-25-7, Tantalum, properties
7440-32-6, Titanium, properties 7440-47-3, Chromium, properties
7440-62-2, Vanadium, properties 7440-70-2, Calcium, properties
RL: PRP (Properties)
(systems, of lithium-silicon-, thermodn. properties of, for **battery** anodes)
IT 7439-93-2, Lithium, properties
RL: PRP (Properties)
(systems, silicon-, ternary, thermodn. properties of, for **battery** anodes)

L10 ANSWER 35 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1980:44732 CAPLUS
DOCUMENT NUMBER: 92:44732
TITLE: Current generating cell with alloy anode
INVENTOR(S): McKaveney, James P.; Prieto, Martin A.
PATENT ASSIGNEE(S): Occidental Research Corp., USA
SOURCE: U.S., 4 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4173687	A	19791106	US 1978-917167	19780620

PRIORITY APPLN. INFO.: US 1978-917167 19780620
ST **battery** anode iron molybdenum alloy; vanadium iron alloy anode **battery**; silicon iron alloy anode **battery**; phosphorus iron alloy anode **battery**; silicide iron anode **battery**; tungsten silicide anode **battery**; niobium silicide anode **battery**
IT Anodes
(**battery**, iron-silicon alloy and silicide, primary alk.-)
IT 12022-99-0 **12034-80-9** 12039-88-2 12136-78-6 39367-11-8
70409-70-0 72440-31-4 72440-32-5
RL: USES (Uses)
(anodes, primary alk.-**battery**)

=> s l11 not l10
L14 21 L11 NOT L10

=> d l14 1-21 ibib

L14 ANSWER 1 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2003:454747 CAPLUS
DOCUMENT NUMBER: 139:15976
TITLE: Super self-aligned heterojunction bipolar transistor and its manufacturing method
INVENTOR(S): Park, Soo Gyun; Lee, Young Ho; Seo, Kang Hoon; Choi, Jin Sung; Rho, Young Hwa
PATENT ASSIGNEE(S): S. Korea
SOURCE: U.S. Pat. Appl. Publ., 17 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 2003107051	A1	20030612	US 2002-294046		20021114
PRIORITY APPLN. INFO.:			KR 2001-77723	A	20011210

L14 ANSWER 2 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:194891 CAPLUS
DOCUMENT NUMBER: 136:287194
TITLE: A 0.2-.mu.m 180-GHz-fmax 6.7-ps-ECL SOI/HRS self-aligned SEG Si-Ge HBT/CMOS technology for microwave and high-speed digital applications
AUTHOR(S): Washio, Katsuyoshi; Ohue, Eiji; Shimamoto, Hiromi; Oda, Katsuya; Hayami, Reiko; Kiyota, Yukihiro; Tanabe, Masamichi; Kondo, Masao; Hashimoto, Takashi; Harada, Takashi
CORPORATE SOURCE: Central Research Laboratory, Hitachi, Ltd., Tokyo, 185-8601, Japan
SOURCE: IEEE Transactions on Electron Devices (2002), 49(2), 271-278
CODEN: IETDAI; ISSN: 0018-9383
PUBLISHER: Institute of Electrical and Electronics Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 3 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:349056 CAPLUS
DOCUMENT NUMBER: 131:95625
TITLE: A simplified high-speed bipolar process with Ti salicide metallization: implementation of in situ p-doped polysilicon emitter
AUTHOR(S): Kaplan, W.; Pejnefors, J.; Linder, M.; Sanden, M.; Karlin, T. E.; Malm, G.; Zhang, S.-L.; Grahn, J. V.; Ostling, M.
CORPORATE SOURCE: Department of Electronics, Device Technology Laboratory (EKT), Royal Institute of Technology, Kista, SE-164 40, Swed.
SOURCE: Physica Scripta, T (1999), T79(18th Nordic Semiconductor Meeting, 1998), 318-321
CODEN: PHSTER; ISSN: 0281-1847
PUBLISHER: Royal Swedish Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 4 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:727501 CAPLUS
DOCUMENT NUMBER: 130:9399
TITLE: A 42-GHz (fmax) SiGe-base HBT using reduced pressure CVD
AUTHOR(S): Cho, D.-H.; Ryum, B. R.; Han, T.-H.; Lee, S.-M.; Shin, S.-C.; Lee, C.
CORPORATE SOURCE: Semiconductor Technology Division, Electronics and Telecommunications Research Institute, Taejon, 305-600, S. Korea
SOURCE: Solid-State Electronics (1998), 42(9), 1641-1649
CODEN: SSELA5; ISSN: 0038-1101
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 5 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:432128 CAPLUS
DOCUMENT NUMBER: 127:129365
TITLE: Atmospheric-pressure CVD-grown SiGe epitaxial base heterojunction bipolar transistor using a TiSi2 base electrode
AUTHOR(S): Lee, Soo-Min; Ryum, Byung Ryul; Han, Tae-Hyeon; Cho, Deok-Ho; Kim, Bowoo; Pyun, Kwang Eui
CORPORATE SOURCE: Semiconductor Technology Division, Electronics and Telecommunications Research Institute (ETRI), Taejon, 305-600, S. Korea
SOURCE: Journal of the Korean Physical Society (1997), 30(2, Pt. 1), 315-319
CODEN: JKPSDV; ISSN: 0374-4884
PUBLISHER: Korean Physical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

L14 ANSWER 6 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:178689 CAPLUS
DOCUMENT NUMBER: 126:179919
TITLE: Bipolar transistors
INVENTOR(S): Igarashi, Takayuki
PATENT ASSIGNEE(S): Mitsubishi Electric Corp, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09008056	A2	19970110	JP 1995-158026	19950623

PRIORITY APPLN. INFO.: JP 1995-158026 19950623

L14 ANSWER 7 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1996:598928 CAPLUS
DOCUMENT NUMBER: 125:236174
TITLE: Manufacture of heterojunction bipolar transistors without thermal treatment
INVENTOR(S): Ren, Heiretsu; Cho, Tokuko; Kan, Taigen; Ri, Shumin; Ken, Gojun
PATENT ASSIGNEE(S): Korea Electron Transmission, Japan; Kankoku Denki Tsushin Kosha
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08186125	A2	19960716	JP 1994-315371	19941219

PRIORITY APPLN. INFO.: JP 1994-315371 19941219

L14 ANSWER 8 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1996:422620 CAPLUS
DOCUMENT NUMBER: 125:64090
TITLE: Sintered iron alloy having good electric conductivity and wear resistance for current **collector** of pantographs
INVENTOR(S): Koike, Masashi

PATENT ASSIGNEE(S): Mitsubishi Materials Corp, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08120425	A2	19960514	JP 1994-330289	19941017

PRIORITY APPLN. INFO.: JP 1994-330289 19941017

L14 ANSWER 9 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:931601 CAPLUS
DOCUMENT NUMBER: 124:19779
TITLE: Fabricating a heterojunction bipolar transistor having reduced base parasitic resistance
INVENTOR(S): Ryum, Byung-Ryul; Cho, Deok-Ho; Han, Tae-Yeon; Lee, Soo-Min; Kwon, Oh-Joon
PATENT ASSIGNEE(S): Electronics and Telecommunications Research Institute, S. Korea; Korea Telecommunication Authority
SOURCE: U.S., 9 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5459084	A	19951017	US 1994-358533	19941219
FR 2728389	A1	19960621	FR 1994-15541	19941219
FR 2728389	B1	19970207		
GB 2296375	A1	19960626	GB 1994-25590	19941219
GB 2296375	B2	19980624		
DE 4445346	A1	19960627	DE 1994-4445346	19941219
DE 4445346	C2	20010823		

PRIORITY APPLN. INFO.: US 1994-358533 19941219

L14 ANSWER 10 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:294963 CAPLUS
DOCUMENT NUMBER: 122:94487
TITLE: Manufacture of semiconductor device with titanium silicide layer
INVENTOR(S): Yoshida, Takehito
PATENT ASSIGNEE(S): Matsushita Electric Ind Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06295879	A2	19941021	JP 1993-83099	19930409

PRIORITY APPLN. INFO.: JP 1993-83099 19930409

L14 ANSWER 11 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1994:619479 CAPLUS
DOCUMENT NUMBER: 121:219479
TITLE: Bipolar complementary MOS device
INVENTOR(S): Furuhata, Tomoyuki

PATENT ASSIGNEE(S): Seiko Epson Corp., Japan
SOURCE: U.S., 14 pp. Cont. of U.S. Ser. No. 691,448, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5336911	A	19940809	US 1992-975129	19921112
EP 341821	A3	19900926	EP 1989-303391	19890406
EP 341821	B1	19950927		
R: DE, FR, GB, NL				
US 5059549	A	19911022	US 1990-499906	19900327

PRIORITY APPLN. INFO.: JP 1988-111421 19880510
US 1989-329561 19890328
US 1991-691448 19910425

L14 ANSWER 12 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1994:470976 CAPLUS
DOCUMENT NUMBER: 121:70976
TITLE: Process investigations for a 30-GHz fT submicrometer double poly-Si bipolar technology
AUTHOR(S): Yamaguchi, Tadanori; Uppili, Sudarsan; Lee, June S.; Kawamoto, Galen H.; Hanson, Ronald C.
CORPORATE SOURCE: Microelectron., Tektronix, Inc., Beaverton, OR, 97077, USA
SOURCE: IEEE Transactions on Electron Devices (1994), 41(3), 321-9
CODEN: IETDAI; ISSN: 0018-9383
DOCUMENT TYPE: Journal
LANGUAGE: English

L14 ANSWER 13 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:624499 CAPLUS
DOCUMENT NUMBER: 117:224499
TITLE: Manufacture of bipolar semiconductor devices
INVENTOR(S): Sugii, Toshihiro
PATENT ASSIGNEE(S): Fujitsu Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04114434	A2	19920415	JP 1990-233121	19900905

PRIORITY APPLN. INFO.: JP 1990-233121 19900905

L14 ANSWER 14 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:603251 CAPLUS
DOCUMENT NUMBER: 117:203251
TITLE: Fast-operation bipolar transistors
INVENTOR(S): Sugiyama, Mitsuhiro; Tashiro, Tsutomu
PATENT ASSIGNEE(S): Nippon Denki K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04112538	A2	19920414	JP 1990-231664	19900831
JP 3131986	B2	20010205		

PRIORITY APPLN. INFO.: JP 1990-231664 19900831

L14 ANSWER 15 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1991:668630 CAPLUS
DOCUMENT NUMBER: 115:268630
TITLE: Method to fabricate vertical fuse devices and Schottky diodes using thin sacrificial layer
INVENTOR(S): Iranmanesh, Ali A.; Lam, Lawrence K. C.
PATENT ASSIGNEE(S): National Semiconductor Corp., USA
SOURCE: U.S., 13 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5059555	A	19911022	US 1990-570068	19900820
JP 04256322	A2	19920911	JP 1991-205780	19910816
JP 3285207	B2	20020527		

PRIORITY APPLN. INFO.: US 1990-570068 A 19900820

L14 ANSWER 16 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1990:46783 CAPLUS
DOCUMENT NUMBER: 112:46783
TITLE: Conductive material and process for preparing it
INVENTOR(S): Yasutomi, Yoshiyuki; Miyoshi, Tadahiko; Sobue, Masahisa; Yamashita, Nobuyuki; Nagase, Hiroshi; Tanno, Kiyohiko; Arimoto, Shoji; Jooraku, Fumio
PATENT ASSIGNEE(S): Hitachi, Ltd., Japan
SOURCE: Eur. Pat. Appl., 25 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 332082	A2	19890913	EP 1989-103783	19890303
EP 332082	A3	19910605		
EP 332082	B1	19930609		
R: DE, FR, GB				
JP 01226767	A2	19890911	JP 1988-51487	19880307
JP 2949586	B2	19990913		
US 5085806	A	19920204	US 1989-319307	19890306
KR 9708548	B1	19970527	KR 1989-2793	19890307
US 5271871	A	19931221	US 1991-754501	19910903
US 5403674	A	19950404	US 1993-118207	19930909

PRIORITY APPLN. INFO.: JP 1988-51487 A 19880307
US 1989-319307 A3 19890306
US 1991-754501 A3 19910903

L14 ANSWER 17 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1989:28198 CAPLUS
DOCUMENT NUMBER: 110:28198
TITLE: Composite ceramics, their manufacture, and current

collectors and sliding members having high dimensional accuracy
INVENTOR(S): Yasutomi, Yoshiyuki; Nakamura, Kousuke; Kita, Hideki; Sobue, Masahisa
PATENT ASSIGNEE(S): Hitachi, Ltd., Japan
SOURCE: Eur. Pat. Appl., 77 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 286127	A1	19881012	EP 1988-105644	19880408
EP 286127	B1	19931027		
R: DE, FR, GB, SE				
JP 63252973	A2	19881020	JP 1987-86871	19870410
JP 07023265	B4	19950315		
JP 63277576	A2	19881115	JP 1987-110556	19870508
JP 04079986	B4	19921217		
JP 2543093	B2	19961016	JP 1987-206698	19870820
EP 520520	A1	19921230	EP 1992-113584	19880408
EP 520520	B1	19960911		
R: DE, FR, GB, SE				
US 5378417	A	19950103	US 1989-411330	19890922
US 5130055	A	19920714	US 1990-500102	19900326
US 5316987	A	19940531	US 1992-863505	19920330

PRIORITY APPLN. INFO.:
JP 1987-86871 19870410
JP 1987-110556 19870508
JP 1987-206698 19870820
US 1988-179984 19880411
US 1990-500102 19900326
US 1990-603887 19901026

L14 ANSWER 18 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1988:561416 CAPLUS
DOCUMENT NUMBER: 109:161416
TITLE: Process and device performance of a high-speed double poly-silicon bipolar technology using Borosenic-Poly process with coupling-base implant
AUTHOR(S): Yamaguchi, Tadanori; Yu, Yeou Chong Simon; Lane, Eric E.; Lee, June S.; Patton, Evan E.; Herman, Robert D.; Ahrendt, Diane R.; Drobny, Vladimir F.; Yuzuriha, Todd H.; Garuts, Valdis E.
CORPORATE SOURCE: Tektronix Lab., Tektronix Inc., Beaverton, OR, 97077, USA
SOURCE: IEEE Transactions on Electron Devices (1988), 35(8), 1247-56
CODEN: IETDAI; ISSN: 0018-9383
DOCUMENT TYPE: Journal
LANGUAGE: English

L14 ANSWER 19 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:453177 CAPLUS
DOCUMENT NUMBER: 105:53177
TITLE: Bipolar transistor
INVENTOR(S): Komatsu, Shigeru; Ito, Takao; Katsumata, Yasuhiro; Takaoki, Kiyoshi
PATENT ASSIGNEE(S): Toshiba Corp., Japan
SOURCE: Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 170250	A2	19860205	EP 1985-109543	19850730
EP 170250	A3	19861230		
EP 170250	B1	19901024		
R: DE, FR, GB				
JP 04000590	B4	19920108	JP 1984-258520	19841207
PRIORITY APPLN. INFO.:			JP 1984-160518	19840731
			JP 1984-258520	19841207

L14 ANSWER 20 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:453150 CAPLUS
DOCUMENT NUMBER: 105:53150
TITLE: Solid-state field-effect bipolar device
INVENTOR(S): Simmons, John George; Taylor, Geoffrey Walter
PATENT ASSIGNEE(S): American Telephone and Telegraph Co., USA
SOURCE: PCT Int. Appl., 94 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8601939	A1	19860327	WO 1985-US1720	19850906
W: JP				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
EP 197052	A1	19861015	EP 1985-904564	19850906
EP 197052	B1	19890830		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 62500273	T2	19870129	JP 1985-504030	19850906
JP 06016552	B4	19940302		
AT 46057	E	19890915	AT 1985-904564	19850906
CA 1270933	A1	19900626	CA 1985-491241	19850920
US 4800415	A	19890124	US 1987-9620	19870122
PRIORITY APPLN. INFO.:			US 1984-653440	19840921
			EP 1985-904564	19850906
			WO 1985-US1720	19850906

L14 ANSWER 21 OF 21 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:217566 CAPLUS
DOCUMENT NUMBER: 104:217566
TITLE: Secondary electron emission during ion implantation
AUTHOR(S): Heimann, P. A.; Blakeslee, J.
CORPORATE SOURCE: AT and T Bell Lab., Murray Hill, NJ, 07974, USA
SOURCE: Journal of the Electrochemical Society (1986), 133(4), 779-80
CODEN: JESOAN; ISSN: 0013-4651
DOCUMENT TYPE: Journal
LANGUAGE: English